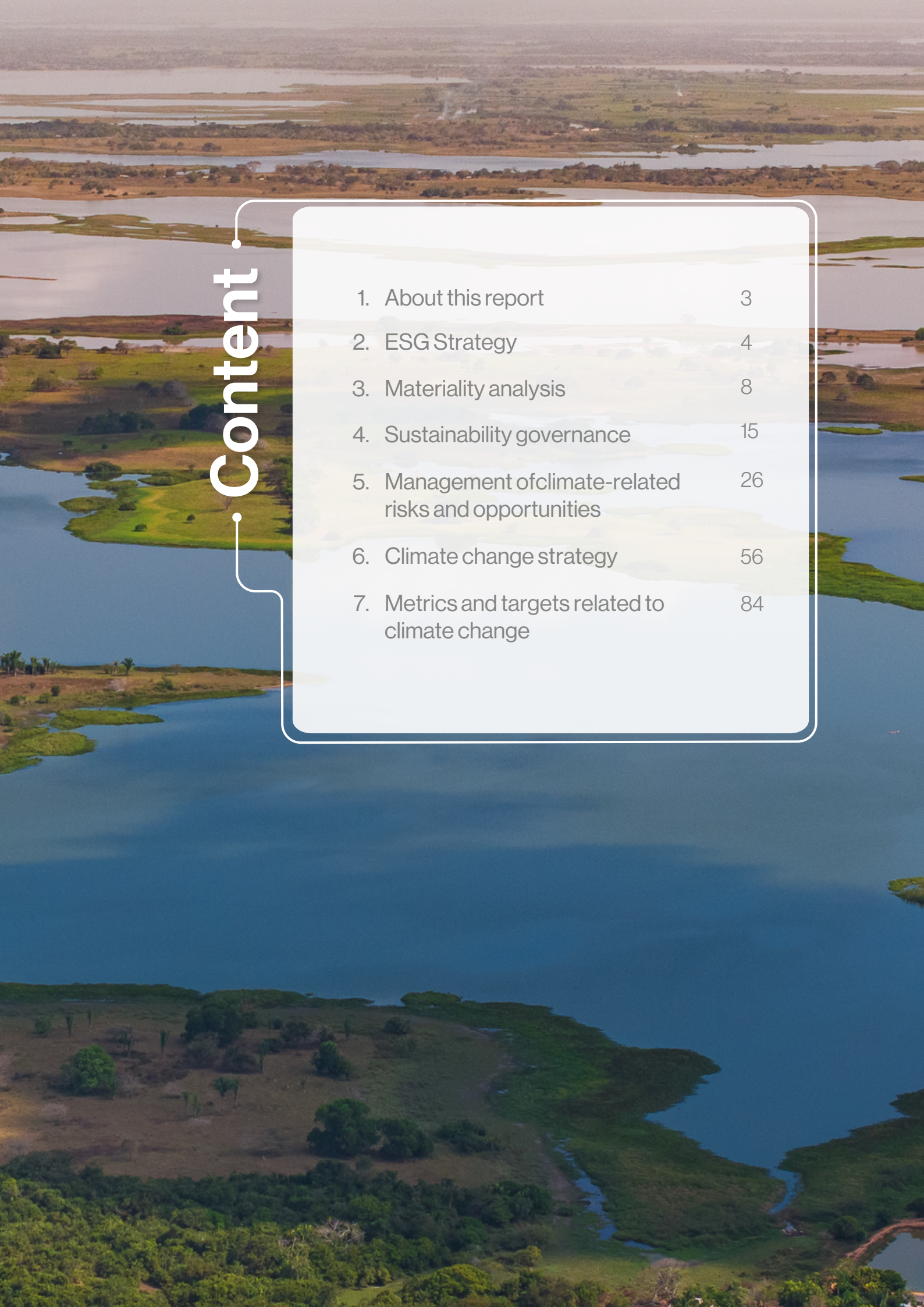
Climate Change Management Report

TCFD

2025

CANACOL ENERGY



Content

1 About this Report

Canacol Energy Ltd. – hereinafter "Canacol" or "the Company" – has prepared its fourth Climate change management report incorporating the recommendations of the Task Force on Climate-related Financial Disclosures reporting framework (hereinafter "TCFD"), as well as the climate metrics suggested by the Sustainability Standards Board (SSB) through the applicable SASB standards for our sector (oil and gas – exploration and production), unless otherwise stated.

In addition, and in line with our ambition to lead natural gas production and to be a benchmark in sustainability and climate change management, our report aims to share the Company's efforts to contribute to the 2030 Agenda, the Paris Agreement, and the Nationally Determined Contributions (NDCs) of the regions in which we operate. Likewise, we aim to effectively respond to the requirements of the Colombian Financial Superintendency, as set forth in Circular 031 of 2021, considering principles of climate responsible investment.

This report covers the climate change management period from January 1 to December 31, 2024, unless otherwise specified, and includes information on 100% of the Company's operations in Colombia and Canada. Its content informs our stakeholders about how the Company has created and sustained value in the short, medium, and long term, while advancing the transition to a low-carbon economy. To this end, it describes progress in implementing our climate strategy, which focuses on the efficient management of key risks and opportunities (current, emerging, and future, through scenario analysis). This strategy is supported by the Company's corporate commitment to reducing greenhouse gas emissions through the design and execution of energy efficiency and decarbonization initiatives, technological conversion and portfolio diversification, as well as innovation, development, and use of renewable and alternative energy sources.

Our TCFD report is structured into seven (7) chapters, covering topics from the description of the business's ESG strategy and double materiality analysis to the presentation and performance of the climate strategy, governance, risk management, and climate-related metrics and targets.

Contact information
Canacol Energy Ltd.
Principal office: 2000, 215- 9 AV SW Calgary, Alberta T2P 1K3, Canadá
Bogota office: Calle 113 No 7-45, Bogotá, Torre B, Oficina 1501
Contact information: esg@canacolenergy.com

2 | ESG Strategy

Our strategy is aimed at enhancing the competitiveness of our business and improving the quality of life for millions of people through the comprehensive management of various ESG matters, structured around three fundamental pillars: a cleaner energy future (E), empowering our people (S), and a transparent and ethical business (G).

Through this strategy, we seek to fulfill our higher purpose of building a cleaner energy future, leveraging the exploration, production, and supply of conventional natural gas under a responsible, timely, profitable, resilient, and sustainable operation. Our strategic sustainability goals o targets are built upon three core commitments, overseen by the Company's Board of directors and Executive team, and managed by our employees:

A cleaner energy future

We are committed to supplying natural gas with the highest levels of operational and environmental efficiency. We apply a comprehensive approach to minimize our ecological footprint and actively support Colombia's clean and fair energy transition.

Empowering our people

We promote the well-being, safety, and development of our employees, contractors, and neighboring communities. We foster a culture of inclusion, respect, and growth, ensuring that our actions generate positive and sustainable impacts on society and the environment while upholding human rights across all levels of our operation.

A transparent and ethical bussines

We uphold the highest standards of corporate governance, business ethics, and transparency, complying with the highest practices in governance as well as the management of risks, opportunities, and impacts.

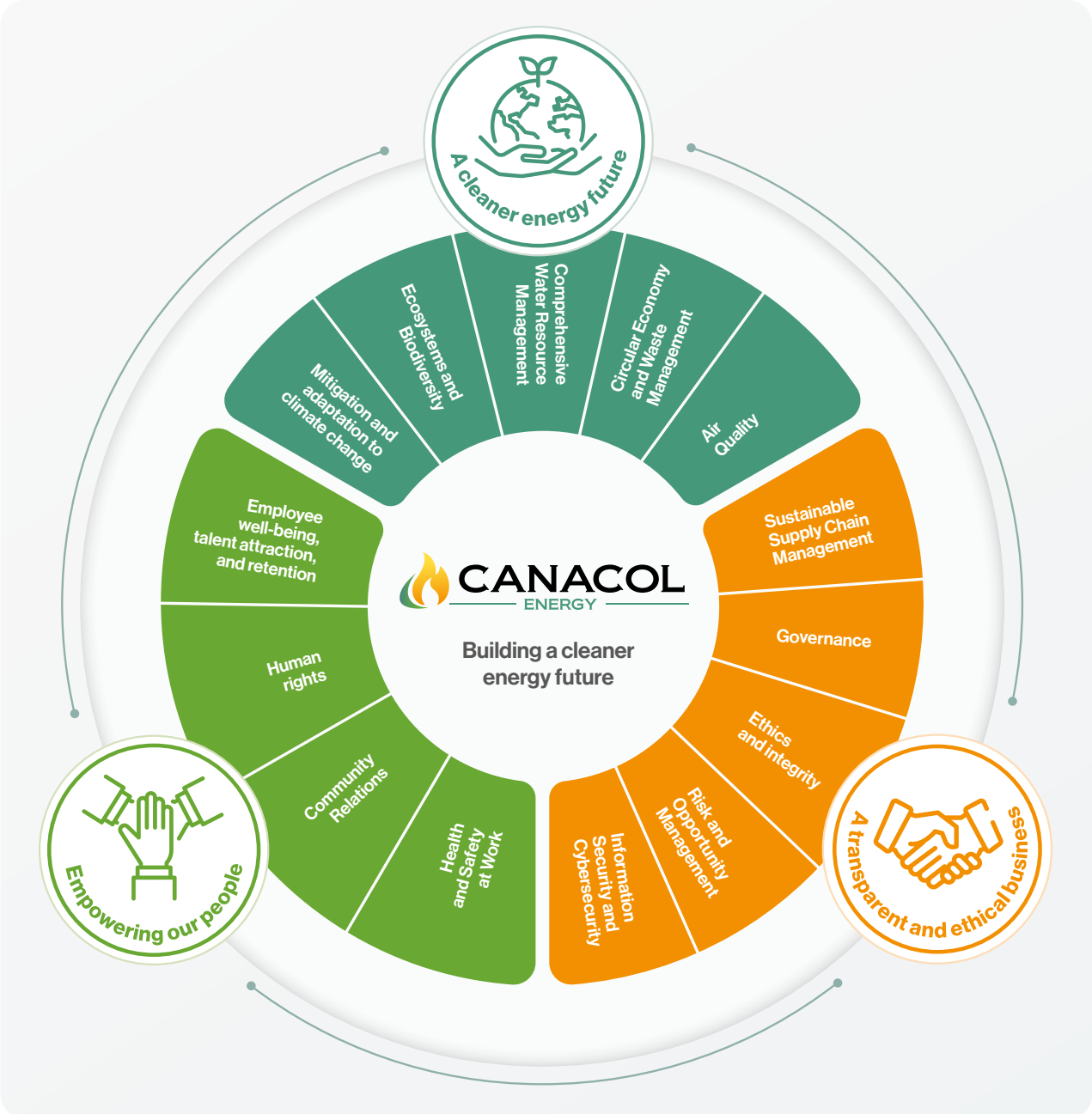
As part of our strategic dimension **"a cleaner energy future"**, we manage the issue of **"climate change mitigation and adaptation"**. In this area, we recognize our role in Colombia's energy transition, where natural gas is positioned as a fundamental pillar, globally acknowledged as a transition fuel that offers a viable and responsible solution for advancing toward a low-carbon economy.

Recent international conferences have reaffirmed the urgency of strengthening climate action and biodiversity protection. COP29 emphasized the need to accelerate climate finance and the shift to cleaner energy sources, while COP16 on biodiversity highlighted the importance of integrating nature conservation across all economic sectors, including the energy sector. In this context, our sustainability strategy adopts a comprehensive approach, incorporating concrete actions in both climate change mitigation and biodiversity protection, based on the understanding that these challenges are interconnected and require coordinated solutions.

Our ESG strategy is aligned with the 14 Sustainable Development Goals (SDGs) of the 2030 Agenda, with a particular focus on those most relevant to climate change mitigation and adaptation: SDG 13 (Climate Action), SDG 7 (Affordable and Clean Energy), and SDG 12 (Responsible Consumption and Production).

At Canacol, we are making strong progress in implementing our sustainability strategy. As a result, we have positioned ourselves as one of the most sustainable companies in the **"Oil & Gas Upstream & Integrated"** sector, achieving high performance in the Corporate Sustainability Assessment (CSA) conducted by S&P Global Sustainable1. We were recognized among the top 10 companies in the Sustainability Yearbook for both 2024 and 2025.

Figure 1. Canacol's sustainability strategy



Sustainability strategy and value creation

To ensure value creation for Canacol and its stakeholders, the Company integrates sustainability matters into corporate strategy (financial and operational).

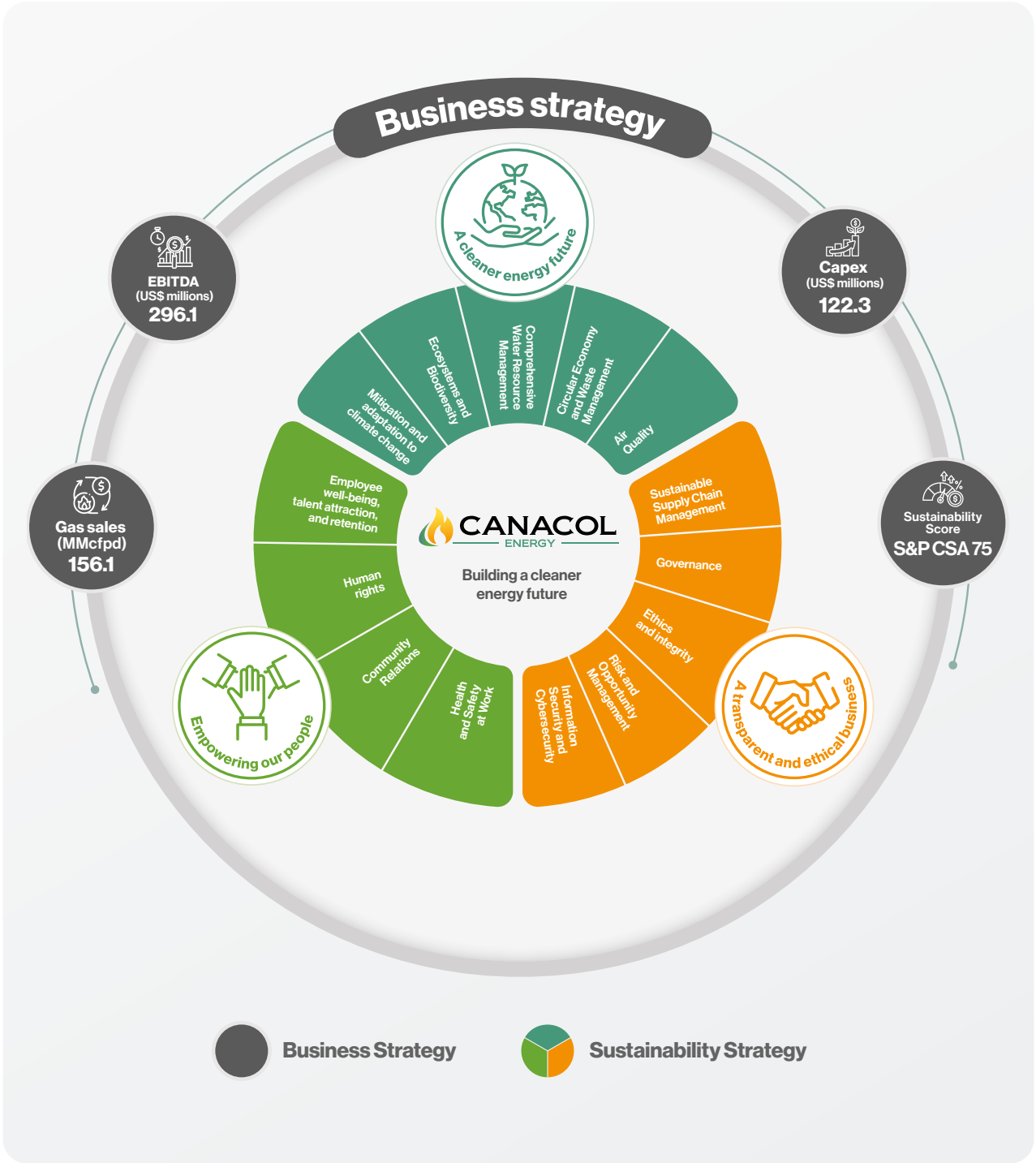
We are currently the leading independent natural gas exploration and production company in Colombia. We supply approximately 16% of the country's natural gas needs and meet more than 50% of the demand in the Caribbean coast region.

Canacol seeks to maintain its competitive and sustainability leadership in Colombia, while also aiming to position itself as a benchmark in the new regions where it plans to expand its strategic presence. To achieve this, our business strategy is focused on:

> Identifying and developing new natural gas exploration and production opportunities in high-potential areas in Colombia and other regions of interest.

Cost-efficient production by optimizing processes and managing assets effectively.
Diversifying our asset portfolio and expanding our strategic footprint.
Leveraging technological innovation to continuously improve our operational and administrative processes, by adopting advanced technologies that increase efficiency and profitability.
Building strong relationships with our local communities and other key stakeholders.
Creating value for our shareholders while generating positive impacts for the broader stakeholder ecosystem.
Effectively integrating sustainability as a core driver of the Company, ensuring profitable operations that are socially and environmentally responsible, and managed in a timely, conscious, and transparent manner.

Figure 2. Corporate strategy and its connection to the sustainability strategy



3 | Materiality analysis

Since 2017, Canacol has periodically updated its materiality analysis considering new trends and evolving external requirements (including competitive, regulatory, legislative, and political contexts). This process enables the timely identification and assessment of current and potential impacts, emerging and strategic risks, and opportunities, which, based on their relative importance[1], must be considered for the ongoing update of our business and sustainability strategies.

In 2024, we advanced the development of our first double materiality assessment, integrating both financial and impact perspectives:

- **Financial perspective:** Identification and assessment of ESG-related risks and opportunities that may affect the Company's value creation and that of its financial stakeholders.
- **Impact perspective:** Identification and assessment of the actual and potential positive and negative impacts caused by Canacol's operations, associated with ESG matters, that affect or could affect society and the environment (all our stakeholders).

This updated materiality analysis has served as a critical tool for refining and reshaping our sustainability and business strategies, including our climate change strategy. The analysis was structured in alignment with the European Corporate Sustainability Reporting Directive (CSRD) and complies with major international standards, including GRI and SASB. Additionally, it addresses the requirements of key sustainability analysts such as S&P Global Sustainable1, MSCI, Sustainalytics, among others.

We emphasize that our materiality assessment enables us to determine the relative importance of climate-related risks and opportunities in comparison to other ESG issues, thereby meeting one of the cores TCFD framework requirements related to risk management.

Phases of the materiality analysis

Assessment of the current state: This stage included, i) the diagnosis of Canacol's current sustainability management, ii) a review of global ESG trends for the sector, iii) an analysis of the ESG regulatory environment in the sector, iv) a review of trending ESG reporting standards (GRI, SASB, IFRS S1 and S2, ESRS, among others), v) a competitive analysis of peer companies and sector leaders, and vi) the identification and initial proposal of 14 sustainability issues and their associated impacts, risks, and opportunities, defined from the analysis of the aforementioned points.

Value chain mapping: In this step, i) we identified and prioritized the main (7) and subgroups (21) of stakeholders based on their strategic importance to the Company, using an influence and dependency analysis, ii) we mapped our value chain[2], performing a preliminary analysis of how the different sus-

1 Relative importance refers to the significance or weight of a sustainability issue relative to others, within a double materiality context. The assessment of materiality is based on dialogue with affected stakeholders (internal and external to the organization). (Adapted from: Commission Delegated Regulation (EU) 2023/2772 of 31 July 2023.) The significance or priority of a sustainability issue depends on the significance of its resulting impacts, risks, and opportunities.

2 For more information, see the following link (pages 7 to 9): Click here

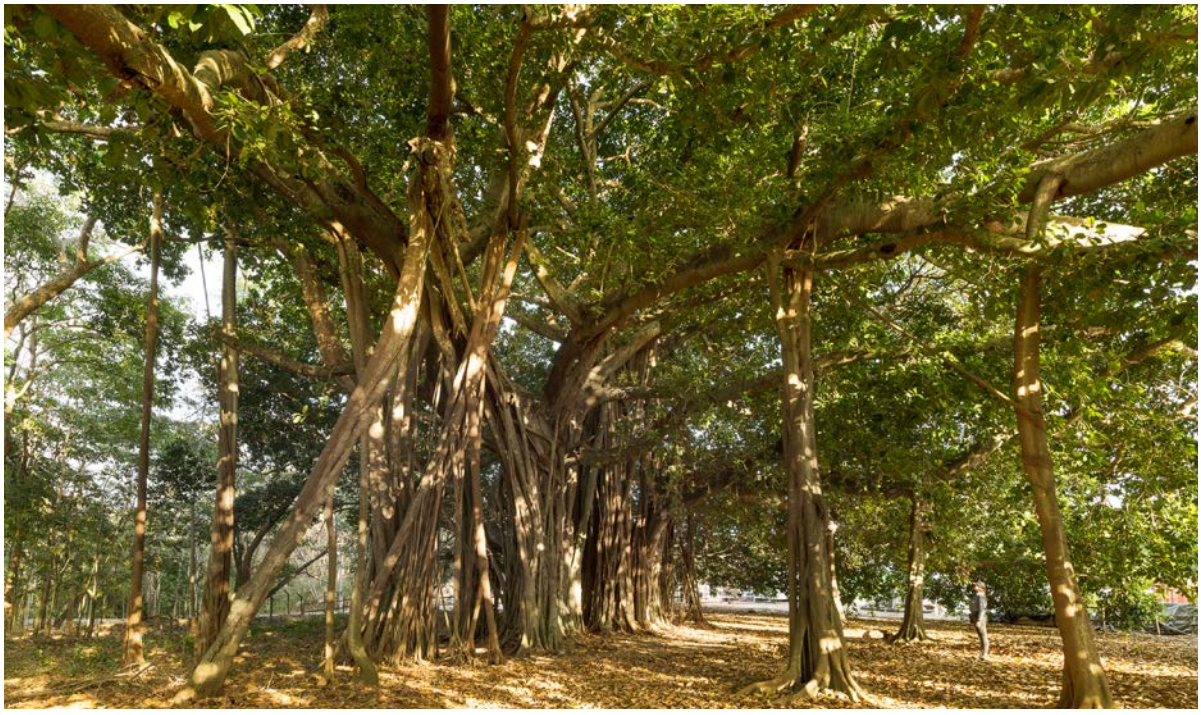
tainability issues (identified in step 1) impact each activity along Canacol's upstream and downstream value chain, prior to consultation with stakeholders (stage 3).

Stakeholder consultation: During this phase, we conducted interviews and surveys with 12 strategically prioritized stakeholder sub-groups. With their support, we semi-quantitatively analyzed and assessed the impacts, risks, and opportunities defined for the 14 sustainability issues. This process allowed us to refine the initial list of sustainability issues, impacts, risks, and opportunities, and to obtain an initial valuation of these.

Prioritization and validation of impacts, risks, and opportunities: In this phase, we socialized and validated the consultation information with the Company's ESG and Risk teams, analyzing the scope, severity, and likelihood of the impacts, risks, and opportunities (based on stakeholder feedback). We also socialized and validated the materiality consultation results with the Board of directors, who, after review, approved the process carried out. The key outcome of this stage was the final assessment of the impacts, risks, and opportunities from both Canacol's perspective and that of its stakeholders, which allowed the final development of financial and impact matrices for each of the 14 sustainability issues identified as relevant for the Company.

Prioritization of sustainability issues: Finally, we developed the materiality matrix, which presents the importance of sustainability issues from both the impact and financial perspectives. It is important to highlight that the prioritization of each sustainability issue, represented in the final matrix, is based on the relevance or valuation of their associated impacts, risks, and opportunities.

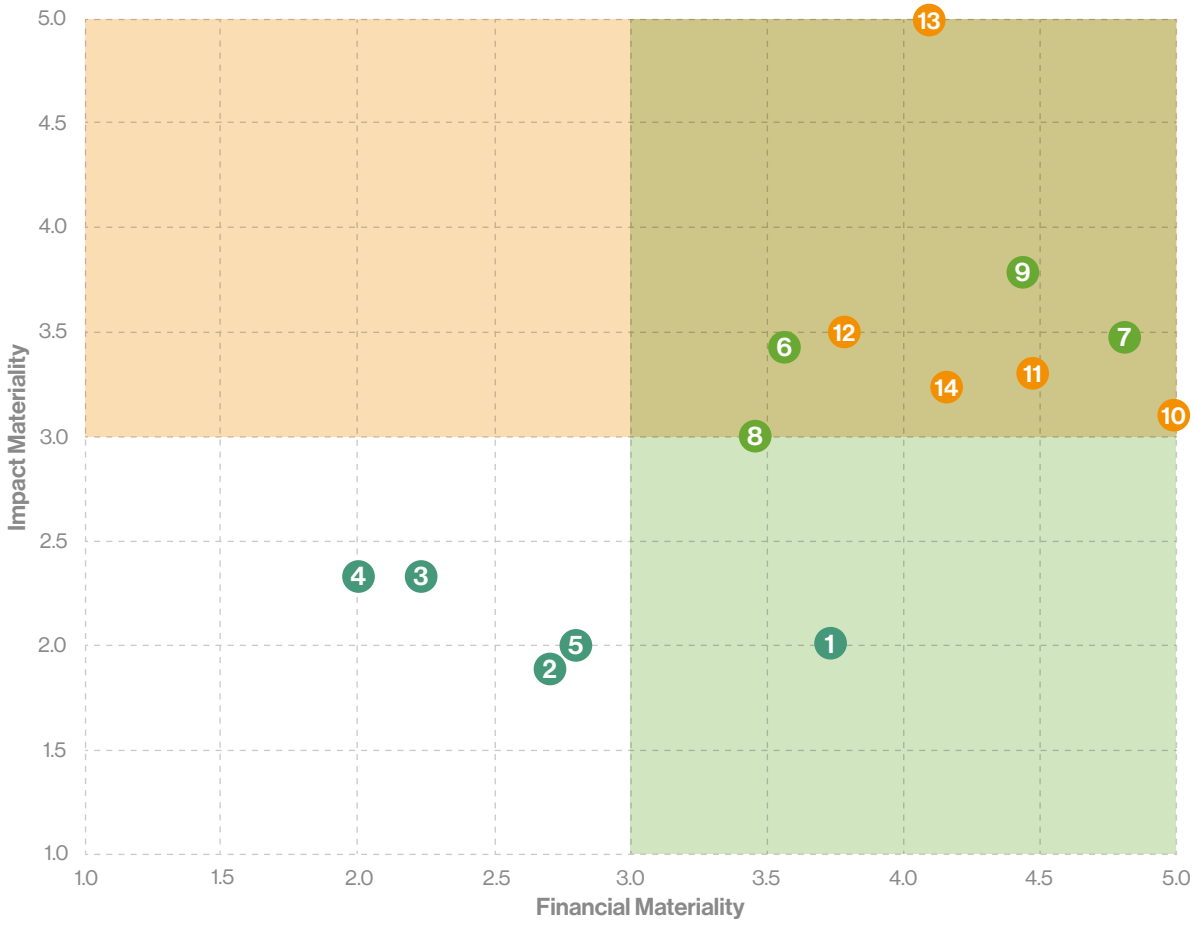
External verification: To ensure transparency and integrity in the materiality process, an audit was conducted with an independent third party, ensuring the process and the quality of the reported information.



2 For more information, see the following link (pages 7 to 9): Click here

Figure 3. Double materiality matrix (last update, 2024)

Dimension	Sustainability Issue 2024	
A Cleaner Energy Future (E)	1 Climate change mitigation and adaptation	4 Circular economy and waste management
	2 Ecosystems and biodiversity	5 Air quality
	3 Comprehensive water resource management	
Empowering Our People (S)	6 Employee well-being, attraction and retention of talent	8 Community relations
	7 Human rights	9 Health and safety at work
A Transparent and Ethical Business (G)	10 Sustainable supply chain management	13 Risk and opportunity management
	11 Governance	14 Information security and cybersecurity
	12 Ethics and integrity	



The materiality matrix should be interpreted with the following considerations: **Orange box:** The area of the matrix where sustainability issues of highest relative importance from the impact materiality perspective are located, i.e., those with the greatest potential to affect various stakeholder groups. **Green box:** The area of the matrix where sustainability issues of highest relative importance from the financial materiality perspective are located, i.e., those with the greatest potential to affect the company's value creation capacity and its financially significant stakeholders. **Intersection of the orange and green boxes:** Issues whose relative importance is relevant from both materiality perspectives.

According to the results obtained, 10 of the sustainability issues[3] have the highest relative importance from the financial perspective (in order of highest to lowest importance)[3]:

Sustainable value chain management
Human rights*
Governance*
Occupational health and safety*
Information security and cybersecurity
Risk and opportunity management*
Climate change mitigation* and adaptation
Ethics, integrity, and transparency*
Employee well-being, talent attraction and retention
Community relations*

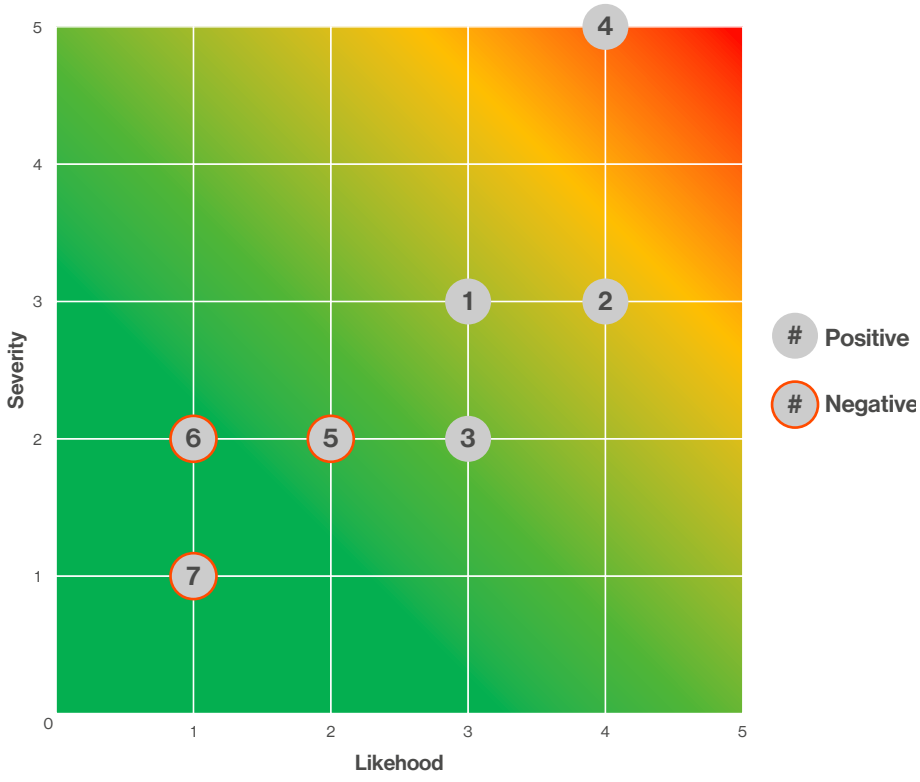
Financial and impact matrices for the issue of climate change mitigation and adaptation

The impact materiality matrix for this issue (figure 4) indicates that the main positive impact generated or potentially generated by Canacol is its contribution to Colombia's energy security, particularly during periods when the country experiences natural phenomena that affect hydroelectric power generation, such as El Niño. On the other hand, the matrix shows that the main negative impact generated or potentially generated by the Company is the increase in greenhouse gas emissions, leading to negative externalities and/or imbalances in the climate and natural ecosystems.

3 An asterisk (*) highlights issues that are of high financial importance to the industry according to SASB standards

Figure 4 . Impact materiality matrix – climate change mitigation and adaptation

Dimension	Susatinability Issue	Materiality	Type of impact	Impact description	No	Likelihood	Severity
Environmental	Climate Change Mitigation and Adaptation	Impact	Positive	Contribution to the reduction of GHG emissions - causing positive externalities and/or a positive effect on the climate balance.	**1**	3	3
Environmental	Climate Change Mitigation and Adaptation	Impact	Positive	Optimization of the country's energy matrix and support for a just energy transition—through the use of natural gas as a transitional energy source.	**2**	4	3
Environmental	Climate Change Mitigation and Adaptation	Impact	Positive	Contribution to the fulfillment of the NDC for Colombia (Paris Agreement): to the sectoral goal of reducing 11.2 MtCO2e by 2030 (PIGCC, with a 2018-2030 horizon with an integrated goal for the entire energy sector of 11.2 Mt CO2eq), and to the country goal (51% BaU - emit a maximum of 169.44 million tCO2eq in 2030).	**3**	3	2
Environmental	Climate Change Mitigation and Adaptation	Impact	Positive	Contribution to the country's energy security - especially when the country is experiencing natural phenomena that impact hydropower generation, such as the El Niño phenomenon (operation of thermal power plants).	**4**	5	5
Environmenta	Climate Change Mitigation and Adaptation	Impact	Negative	Contribution to the increase in GHG emissions, causing negative externalities and/or climate imbalance.	**5**	2	2
Environmental	Climate Change Mitigation and Adaptation	Impact	Negative	Degradation of nature, loss of biodiversity and impact on ecosystems, lands and/or ecosystem services caused by extreme weather events and their consequences.	**6**	1	2
Environmental	Climate Change Mitigation and Adaptation	Impact	Negative	Impact on compliance with the NDC for Colombia (Paris Agreement): the sectoral target of reducing 11.2 MtCO2e by 2030 (PIGCC, with a 2018-2030 horizon with an integrated target for the entire energy sector of 11.2 Mt CO2eq), and the country target (51% BaU - emit a maximum of 169.44 million tCO2eq in 2030).	**7**	1	1

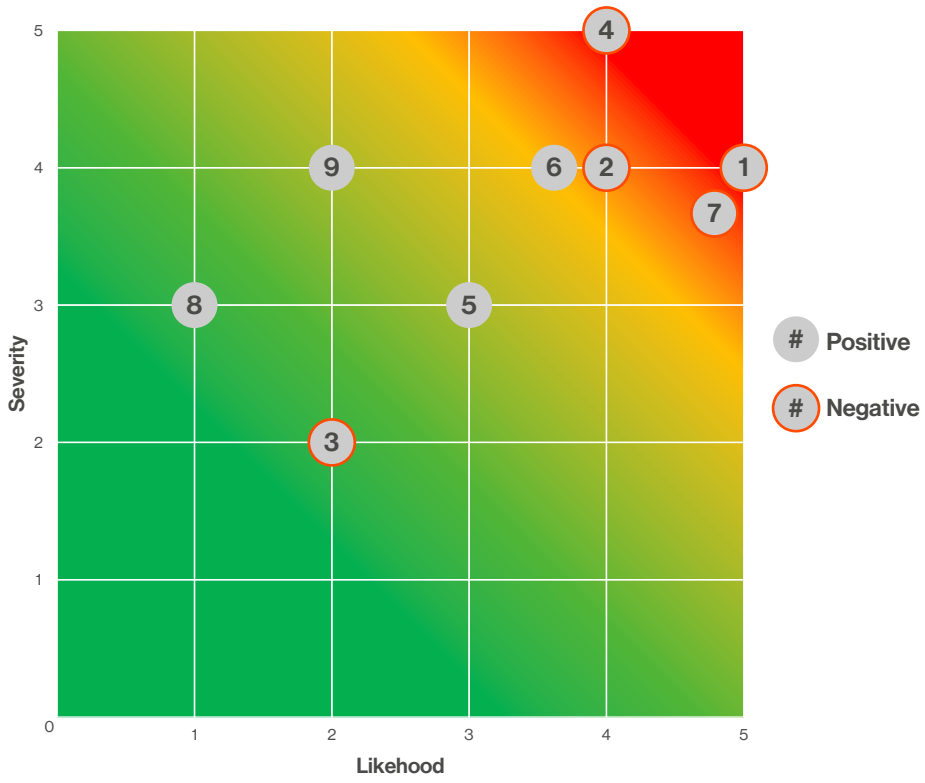


Similarly, the financial materiality matrix for the issue of climate change mitigation and adaptation (figure 5), indicates that the main transition-related market risk for the Company is the shortening of natural gas supply contract terms. This is followed by a transition-related regulatory/legislative risk, including the implementation of carbon pricing mechanisms, the strengthening of existing regulations, and the introduction of emerging regulations.

On the other hand, the matrix identifies the main value creation opportunity for Canacol as the improvement of operational eco-efficiency and climate resilience.

Figure 5. Financial materiality matrix – climate change mitigation and adaptation

Dimension	Susatinability Issue	Materiality	Evaluated element	Description of the risk or opportunity	ID	Likelihood	Severity
Environmental	Climate Change Mitigation and Adaptation	Financial	Risk	*Carbon pricing mechanisms, strengthening of current regulations, and emerging regulations—as a result of the obligation to comply with environmental laws and regulations and/or international agreements regarding climate change and carbon emissions management.	1	5	4
Environmental	Climate Change Mitigation and Adaptation	Financial	Risk	*Natural disasters - caused by the increase in the frequency and duration of extreme weather events.	2	4	4
Environmental	Climate Change Mitigation and Adaptation	Financial	Risk	*Oil and gas sector lags due to lack of access to new low-emission technologies such as hydrogen, biomass, carbon capture and use (CCUS), and storage.	3	2	2
Environmental	Climate Change Mitigation and Adaptation	Financial	Risk	*Reduction in gas supply contract terms	4	4	5
Environmental	Climate Change Mitigation and Adaptation	Financial	Opportunity	*Participation in carbon markets - through the sale of emission allowances due to the significant reduction in GHG emissions below the sector's emissions cap.	5	3	3
Environmental	Climate Change Mitigation and Adaptation	Financial	Opportunity	*Access to tax benefits, improved financing rates, and increased company liquidity—due to the implementation of energy efficiency projects, the use of non-conventional renewable energy, and carbon capture (CCS) technologies.	6	4	4
Environmental	Climate Change Mitigation and Adaptation	Financial	Opportunity	*Improved sustainability/ESG index ratings/rankings - due to the implementation of good climate change management practices.	7	5	4
Environmental	Climate Change Mitigation and Adaptation	Financial	Opportunity	*Diversification of the service portfolio – resulting from the implementation of renewable sources, leveraging its experience in infrastructure and project management.	8	1	3
Environmental	Climate Change Mitigation and Adaptation	Financial	Opportunity	*Improved operational eco-efficiency and climate resilience—derived from the implementation of reduction, mitigation, and adaptation measures, which in turn generates a decrease in operating costs.	9	2	4



This materiality assessment provides a general analysis of the risks, opportunities, and impacts associated with all ESG issues. However, throughout this report, we will specifically detail the physical and transition risks—current, emerging, and future—related to climate change.

The results of this analysis have been fundamental to Canacol's sustainability management, enabling the Company to:

- Make informed strategic decisions based on ESG risks and opportunities that affect or may affect the organization (financial materiality), as well as considering the impacts that affect or may affect society and the environment (impact materiality).
- Strengthen the comprehensive management of sustainability, aligning it with the demands, expectations, and needs of our investors, clients, regulators, employees, communities, and other stakeholders.

For more information about our materiality analysis process, please refer to the following link: Click here

4 Sustainability Governance

4.1. Disclosure scope in relation to the tcfd framework recommendations

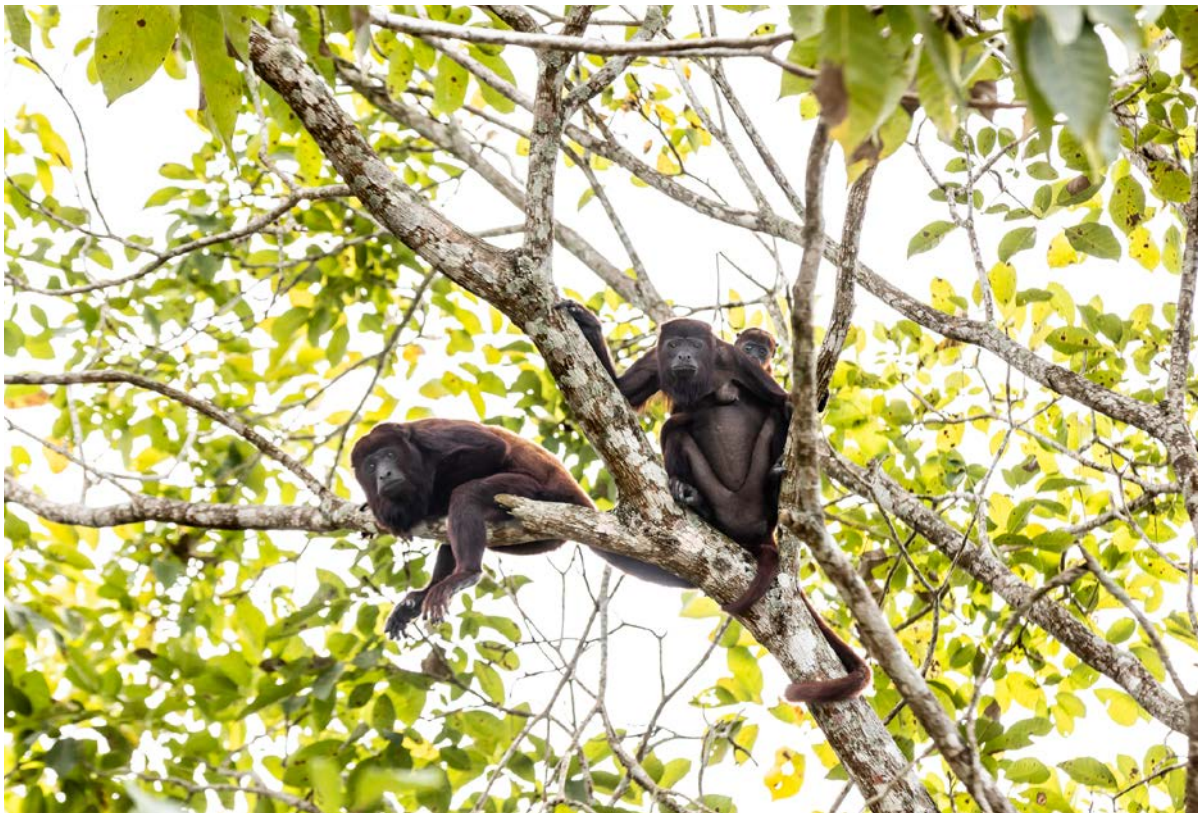
Governance

This report discloses Canacol's action against recommendations a and b of the "Governance" element of the TCFD framework:

Describe the board's oversight of climate-related risks and opportunities.
Describe management's role in assessing and managing climate-related risks and opportunities.

Climate change policy

As a fundamental part of climate change management, Canacol built a "Climate Change and Energy Efficiency Policy" as a business guide, with minimum opinions to guide decision-making and achieve efficient management of this issue in the Company and its value chain.



4.2. Governance detail

Canacol has developed a sustainability governance model that integrates climate change management and energy efficiency under a double materiality approach. This model establishes a governance structure composed of executive and tactical positions (figure 6), through which the roles and responsibilities necessary to design and execute processes, controls, and procedures have been defined. These processes enable effective oversight, management, and monitoring of climate-related impacts, risks, and opportunities.

Figure 6. Canacol's sustainability governance

From its governance model, the Company recognizes the importance of strong and effective leadership to fulfill its mission and achieve its strategic objectives. This includes motivating and strengthening the commitment of its employees, who are key to the business's success and the achievement of the goals set by senior management.

The Board of Directors, through its strategic vision and guidance, defines the direction of Canacol in the short, medium, and long term, ensuring that our actions remain aligned with corporate values and our overarching purpose. Meanwhile, the **Executive Team**, with leadership and expertise, translates this vision into concrete actions, overseeing daily operations and ensuring the effective execution of the Company's strategies.

Role of the board of directors, senior management, and employees in the evaluation and management of climate-related risks and opportunities

The implementation of good corporate governance practices has led Canacol to successfully manage and execute its ESG and climate change strategies. It is important to highlight that our governance model ensures that climate-related impacts, risks, and opportunities are integrated into all decision-making processes within the Company.

Below, we present a description of the roles and responsibilities of each position within our sustainability governance, with a focus on climate management (table 2). Additionally, we highlight the governance mechanisms that are essential to effectively fulfill each role and responsibility, as well as the key management milestones achieved during 2024.

Table 2. Role of the board of directors, senior management, and employees in the assessment and management of climate-related risks and opportunities

Body/Position	Roles and Responsibilities	Governance Mechanisms	Management During the Reporting Fiscal Year
Board of Directors	• The Board of Directors is legally responsible for overseeing the management of the business and all strategic matters of the Company (including ESG topics). It has the authority and legal obligation to protect and enhance Canacol's assets and competitiveness. • The Board plays a fundamental role in overseeing actions aimed at managing the impacts, risks, and opportunities related to climate change. Its responsibilities include reviewing strategies, plans, policies, and business practices designed to address challenges and opportunities in this area, as well as continuously assessing the effectiveness of the measures implemented. • Additionally, the highest governing body ensures the provision of necessary resources (both financial and non-financial) for executing the proposed strategies, plans, and actions. Accordingly, it is responsible for providing the financial balance between risks and opportunities affecting the Company and potential returns for shareholders, safeguarding the long-term viability and continuity of Canacol's operations and assets.	• Oversight of the assessment process for climate change dependencies, impacts, risks, and opportunities. • Review, guidance, and approval of the climate change strategy, including strategic objectives. • Supervision and monitoring of the implementation and progress of the climate change strategy. • Review and approval of action plans for the execution of the climate change strategy (Decarbonization and Methane Reduction Plan, Net Zero Plan, among others). • Review and approval of sustainability policies, including the climate change and energy efficiency policy. • Oversight and monitoring of progress toward sustainability goals and targets. • Review, guidance, and approval of annual budgets. • Approval and oversight of employee incentives related to sustainability.	• The Board of Directors met twice to review the progress of the Company's ESG and climate change strategies. • Likewise, they reviewed the indicators presented and the progress made on various sustainability matters in the 2024 ESG Integrated Report, including a comparison of results with subsequent years. • Additionally, the Board of Directors reviewed and approved the semi-annual reports on strategic and emerging risks and provided recommendations for monitoring and controlling these risks. • Finally, the Board incorporated relevant information about the ESG strategy in the MD&A, Consolidated Financial Statements, and AIF, including updates on the decarbonization and sustainability plan.

Body/Position	Roles and Responsibilities	Governance Mechanisms	Management During the Reporting Fiscal Year
ESG Committee	• The ESG Committee of the Board is responsible for overseeing the implementation and performance of the Company's sustainability and climate change strategies, considering a dual-perspective approach. This working group communicates its assessments to the Board of Directors to make joint decisions. • Additionally, this governing body is responsible for ensuring that climate-related risks and opportunities are integrated into the business strategy (both financial and operational), in alignment with Canacol's corporate values. In line with this, it oversees the development of policies and procedures to effectively identify, assess, and manage both physical and transition risks and opportunities, promoting responsibility, compliance, and a culture of transparency across all levels of the Company.	• Oversee and guide the evolution of standards and best practices in sustainability to ensure the Company's compliance with its ESG commitments. • Supervise and review the process of evaluating and managing dependencies, impacts, risks, and opportunities related to sustainability and climate change. • Oversee and guide scenario analysis processes (future climate risks). • Review and provide guidance for the development of the Company's ESG strategy. • Guide the process of integrating sustainability and climate change strategies into the business strategy (both financial and operational). • Oversee and monitor the implementation of the climate change strategy. • Review and guide the preparation of sustainability and climate change policies. • Define performance objectives in relation to achieving strategic climate-related goals. • Monitor the implementation and oversee progress toward annual and intermediate goals, as well as long-term strategic objectives for addressing climate change mitigation and adaptation processes. • Oversee and monitor performance in external evaluations (S&P/DJSI, CDP, others), guiding the Company in continuous improvement processes. • Review and approve the declaration of independence, commitment, compensation, and performance of third parties selected for verifying the Annual ESG Integrated Report. • Review and approve Canacol's annual ESG Integrated Report and other reports, including the climate change management report (TCFD). • Structure recommendations for final decision-making by the Board of Directors.	• The ESG Committee of the Board met four times to review and approve the Integrated Sustainability Report, the TCFD climate change management report, and the Annual Strategic and Emerging Risks Report. • During these meetings, they also oversaw the progress of the decarbonization plan and the quantification of Greenhouse Gas emissions, including CO2 and methane. • Additionally, the ESG Committee reviewed and approved the corporate policies on climate change and energy efficiency; circular economy and waste management; risks, among others.
Audit Committee	• The Audit Committee at the Board level is responsible for overseeing and reviewing the financial reports provided by the Company to regulatory authorities and shareholders. • Additionally, it supervises the internal control systems related	• Oversee compliance with corporate policies and/or commitments related to sustainability, ensuring efficient management of ESG risks and opportunities. • Review the financial exposures assumed by the Company,	• The Audit Committee of the Board of Directors reviewed and approved Canacol's Annual Strategic and Emerging Risks Report. • Additionally, it reviewed and incorporated the analysis of risks and progress of the ESG

Body/Position	Roles and Responsibilities	Governance Mechanisms	Management During the Reporting Fiscal Year
	to finance and accounting, as well as the auditing, accounting, and financial reporting processes of the Company. • This governing body monitors the implementation and performance management of sustainability matters, including climate-related issues, from a financial materiality perspective. In this regard, it is responsible for reviewing the Company's risk management policies and processes, established to identify, assess, and effectively address the key risks and opportunities of the business.	including positions in physical and financial commodity markets, derivative strategies, capital commitments, sovereign and exchange rate risk exposures, and interest rate fluctuations. • Review the adequacy and effectiveness of the Company's insurance policies, particularly concerning the potential materialization of climate risks. • Oversee and guide acquisitions, mergers, and divestitures considering ESG criteria, current and future business needs, and capital markets conditions. • Supervise and guide key capital expenditures. • Review and guide annual budgets. • Review and guide the process of evaluating dependencies, impacts, risks, and opportunities. • Supervise reporting, auditing, and verification processes. • Review and guide the Sustainability Strategy and its impact on business profitability. • Review and approve clear procedures for identifying, assessing, managing, and monitoring risks, opportunities, dependencies, and impacts related to sustainability and climate change. • Approve corporate policies and/or commitments for the efficient management of sustainability and climate change risks, opportunities, dependencies, and impacts. • Monitor compliance with corporate policies and/or commitments regarding the efficient management of sustainability and climate change risks, opportunities, dependencies, and impacts. • Structure recommendations for final decision-making by the Board of Directors.	strategy into the MD&A reports, AIF, and consolidated financial statements.
CEO	• As a Board member, the CEO is a key link between the organization's executive team and the highest governing body. The CEO is responsible for effectively managing and executing the sustainability strategy in collaboration with ESG Management. Furthermore, the CEO keeps the Board Committees fully informed about	• Review and guide the process of evaluating dependencies, impacts, risks, and opportunities related to sustainability and climate change. • Oversee and guide the establishment of corporate and sustainability objectives. • Review, guide, and support the management and compliance of the sustainability strategy.	• In 2024, the CEO of Canacol played a key role in integrating the climate change strategy into the company's business model. Not only did he lead the implementation of initiatives to reduce the carbon footprint, but he also drove innovation in cleaner, more sustainable technologies. • His leadership was essential

Body/Position	Roles and Responsibilities	Governance Mechanisms	Management During the Reporting Fiscal Year
	progress, achievements, and upcoming plans in this area. • Additionally, the CEO provides feedback to the Executive Team and ensures alignment of annual operational objectives and strategies with key social, environmental, and governance considerations.	• Review, guide, and ensure the integration of sustainability and climate change strategies into the business strategy. • Review, guide, and approve key ESG action plans, including those related to climate change. • Review and guide the formulation of sustainability, climate change, and risk and opportunity management policies. • Monitor and oversee progress towards the goals and objectives related to corporate and sustainability matters. • Review, guide, and approve the annual operational budgets. • Structure recommendations for decision-making by the Board of Directors.	in fostering an organizational culture focused on sustainability, ensuring that all areas of the company understood and adopted practices aligned with climate and ESG commitments. • Furthermore, through dialogue with investors, regulators, and other stakeholders, the CEO reinforced Canacol's commitment to energy transition and long-term value creation in a low-emission environment. • He also worked closely with the finance team to evaluate investments in projects that supported the company's decarbonization goals, balancing economic growth with environmental responsibility.
Sustainability Committee	• The Sustainability Management Committee, established in 2021, is made up of five executives: the CEO, Vice President of Operations, Vice President of Finance, Vice President of Legal Affairs, Vice President of Sustainability, and ESG Management. The CEO, as the leader of the Committee, plays a crucial role in the implementation, updating, and continuous improvement of Canacol's sustainability strategy, enabling the effective execution of strategic objectives and plans in social, environmental, and governance areas. • Additionally, this working group includes employees who are responsible for integrating material issues into all operational activities and corporate processes.	• Guide and oversee the process of evaluating and managing dependencies, impacts, risks, and opportunities related to sustainability and climate change. • Supervise and provide guidance on scenario analysis processes – future climate change risks. • Oversee and guide the establishment of corporate and sustainability objectives. • Review and provide guidance on the development or updating of the sustainability strategy. • Review, guide, and advise on the process of integrating sustainability and climate change strategies into the business model. • Supervise and promote the involvement of various stakeholders in sustainability and climate change management. • Guide and promote the development and high performance of employees, business units, and other key stakeholders in sustainability and climate change.	• In 2024, Canacol's Sustainability Management Committee played a strategic role in implementing and monitoring the company's climate agenda, ensuring compliance with commitments to reduce emissions and integrate sustainable practices across all operations. • The Committee included key representatives from various areas of the Company, including Sustainability, Operations, Finance, Innovation, and Stakeholder Relations. Its leadership was in the hands of the executive team, which maintained seamless communication with the Board of Directors and the CEO. • One of the main focuses of this Committee was monitoring and achieving climate change goals. Throughout the year, detailed tracking of performance in terms of greenhouse gas emissions reduction was conducted, measuring key indicators such as GHG emissions intensity and energy efficiency. Based on this data, strategies were adjusted, and necessary resources were secured to drive projects aligned with the energy transition. • •The Committee's management influenced the integration of the climate change strategy into the corporate strategy. This involved incorporating

Body/Position	Roles and Responsibilities	Governance Mechanisms	Management During the Reporting Fiscal Year
	progress, achievements, and upcoming plans in this area. • Additionally, the CEO provides feedback to the Executive Team and ensures alignment of annual operational objectives and strategies with key social, environmental, and governance considerations.	• Review, guide, and ensure the integration of sustainability and climate change strategies into the business strategy. • Review, guide, and approve key ESG action plans, including those related to climate change. • Review and guide the formulation of sustainability, climate change, and risk and opportunity management policies. • Monitor and oversee progress towards the goals and objectives related to corporate and sustainability matters. • Review, guide, and approve the annual operational budgets. • Structure recommendations for decision-making by the Board of Directors.	sustainability objectives into annual operational planning, fostering an organizational culture based on environmental responsibility, and strengthening internal training on climate issues. Additionally, a climate risk analysis was carried out to mitigate its impact on the company's profitability and operations. • Commitment to transparency and dialogue with stakeholders was also a priority in 2024. The Committee presented progress reports to the Board of Directors and investors, while maintaining active communication with regulators and communities. The results and achievements were reflected in the company's Sustainability Report, reinforcing Canacol's credibility and leadership in the transition to a cleaner energy future. • As a result of this management, it is expected that in 2025 Canacol Energy will make significant progress in reducing its carbon footprint, implement new technologies to improve energy efficiency, and strengthen its position as a leader in decarbonization within the energy sector. This comprehensive approach ensures that the company continues to create value for its stakeholders while actively contributing to climate change mitigation.
ESG Management	• ESG Management is responsible for evaluating, monitoring, and updating the impacts, risks, and opportunities related to climate change. • Additionally, it plays a role in analyzing new impacts, risks, and opportunities identified, determining whether there is a need to update the sustainability and climate change strategies, including the company's strategic objectives and operational goals. In line with this, ESG Management is responsible for establishing, managing, and keeping the sustainability and climate change strategies up to date. • ESG Management and its team lead the reporting and communication processes for sustainabi-	• Supervise and guide the process of evaluating dependencies, impacts, risks, and opportunities related to sustainability, including climate-related ones. • Provide guidance on scenario analysis processes. • Evaluate future trends in dependencies, impacts, risks, and opportunities related to sustainability (updating and identifying new impacts, risks, and opportunities). • Manage and supervise dependencies, impacts, risks, and opportunities related to sustainability. • Develop and update the organization's sustainability and climate change strategies. • Support the integration of sustainability and climate change	• In 2024, the ESG Management played a key role in integrating sustainability principles into Canacol Energy's strategy and operations. Their management ensured that corporate decisions were aligned with business growth, environmental responsibility, social development, and governance transparency. • One of their main objectives was to lead the implementation of the climate strategy, ensuring that greenhouse gas emission reduction targets advanced effectively. To achieve this, they worked closely with the Decarbonization Committee, the ESG Committee, and the Executive

Body/Position	Roles and Responsibilities	Governance Mechanisms	Management During the Reporting Fiscal Year
	lity and climate change, which are directed toward the company's internal and external stakeholders.	strategies into the business model. • Supervise and measure the progress of sustainability and climate change strategies. • Develop policies, models, procedures, and/or corporate sustainability commitments. • Supervise, guide, and develop sustainability, climate change, and other related reports. • Promote the involvement of various stakeholders in sustainability and climate change management. • Develop training programs for employees, business units, and other key stakeholders on sustainability and climate change.	Team, providing key information for decision-making and promoting innovative initiatives in energy efficiency and clean technologies. • From an environmental perspective, the ESG Management supervised the company's compliance with regulatory standards and voluntary sustainability commitments. This included managing environmental performance, identifying climate risks, and preparing sustainability reports with transparent metrics for investors and other stakeholders.
Business Units	• The business units are responsible for executing/implementing the initiatives and actions proposed in the sustainability and climate change strategies. This is done in collaboration with the ASG team, aiming to achieve successful results.	• Promoting and overseeing the implementation of sustainability and climate change strategies, as well as managing these initiatives with the personnel in each area. • Reporting on progress and challenges in the implementation of sustainability and climate change measures within their processes. • Monitoring and supervising tactical and strategic indicators, as well as progress towards strategic goals and objectives to address climate change mitigation and adaptation.	• In 2024, the Business Units of Canacol Energy played a key role in implementing the company's decarbonization and sustainability strategy. Their efforts focused on aligning operations with climate objectives, ensuring the reduction of GHG emissions and optimizing resource use. • Each business unit integrated the guidelines established by the Decarbonization Committee and ESG Management, adapting initiatives to their respective areas of operation. Their work included identifying opportunities to improve energy efficiency, implementing cleaner technologies, and adopting sustainable practices throughout the value chain. • In the exploration and production area, priority was given to reducing the carbon footprint through optimized energy consumption and the reduction of fugitive emissions. Operational processes were enhanced, including continuous emissions monitoring and the use of state-of-the-art equipment to minimize environmental impact. • Additionally, all business units actively participated in tracking and reporting progress, providing key data to assess the company's environmental performance. This facilitated continuous

Body/Position	Roles and Responsibilities	Governance Mechanisms	Management During the Reporting Fiscal Year
			improvement in decision-making and increased transparency in communicating sustainability achievements.

* Board meetings and their committees are the primary mechanism for information and oversight regarding the Company's sustainability matters, and they are held at least biannually or as deemed necessary by the chairperson of each Committee. In 2024, a total of 4 meetings were held, during which sustainability management topics were discussed.

Composition, experience, and key expertise of the board of directors

Aware of the growing challenges related to sustainability and climate, Canacol has taken steps to ensure that the Board is adequately equipped and trained to address these issues. Therefore, ESG capacity-building processes, as well as the inclusion of Board members with expertise in these fields, are a priority for our organization.

Table 3. Composition, experience, and key expertise of the board of directors

Board Member	Gender	Age	Director Since	Capital Market	CEO	Compensation	Corporate Governance	ESG	Financial	Goverment Relations	Human Resources	Industry Knowledge	Information Technology	International Operations	Investors Relations	Leadership	Marketing	Mergers and Acquisitions	Oil and Gas Development	Oil and Gas Exploration	Operational	Risk Management	Strategic Analysis	Strategic Planning
Charle Gamba President, CEO and Director	Male	60	2008	x	x	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x
Michael Hibberd Chairman	Male	69	2008	x	x	x	x	x				x		x	x	x	x	x				x	x	x
Valentina Garbarini Director	Female	37	2023				x	x	x		x		x	x		x	x				x	x	x	
David Winter Director	Male	67	2009		x	x	x	x		x	x	x		x		x				x			x	x
Francisco Díaz Director	Male	63	2015	x			x	x	x	x		x		x	x							x		
Gustavo Gattass Director	Male	49	2023	x		x	x		x		x	x		x										x
Silvestre Tovar Leopardi Director	Male	62	2024	x	x	x			x	x	x	x	x	x		x		x				x		x

The members of our Board of directors have extensive experience in the oil and gas industry. Currently, five out of the seven members have experience in sustainability (ESG management), and five of them have experience in risk management.

To strengthen efficiency and decision-making, our Board is composed of five expert, cross-functional committees, including the Audit and ESG committees, which have direct influence over the management of climate-related risks and opportunities (figure 7).

Figure 7. Canacol board committees and key responsibilities

Executive compensation based on ESG objectives (climate action)

Short-term incentive compensation

Canacol's compensation guidelines aim to align the executive team's incentives with the interests of the shareholders. As such, specific metrics have been established to link the compensation of executive staff to corporate performance.

The Company's bonus plan provides executives with the opportunity to receive cash bonuses, contingent upon achieving key performance targets. These targets are defined by the Remuneration Committee of the Board of Directors, which determines the annual objectives for all directors and executives, using these parameters to assess performance for the year 2024 and allocate bonuses accordingly.

Among the key metrics is the achievement of 100% of the annual sustainability objectives. Additionally, the improvement of the Company's ESG performance index serves as a relevant indicator within the variable compensation scheme for the Executive Team.

Table 4. Corporate objectives and performance targets – executive team compensation

	Targets					Payout level				
	Weighting	Threshold	Target	High	Result	< Threshold	Threshold	Target	High	Level Achieved
Operational										
2P Reserves Additions (BCF)	17.50%	48	53	80	48.6	0	50	100	150	9.80%
Average Annual Production (mmscfe/d)	17.50%	165	174	183	168.7	0	50	100	150	12.35%
Financal										
Funds From Operations ($MM)	17.50%	203	218	230	209.4	0	50	100	150	12.48%
Leverage (Debt:EBITDA)	17.50%	2.9		2.4	2.31	0	50	100	150	26.25%
ESG										
Achievement of CSA percentile	3.50%	75		90	98%	0	50	100	150	5.25%
Achievement of key ESG goals	3.50%	9		11	11	0	50	100	150	5.25%
Safety	3.00%	2		1.96	1.35	0	50	100	150	4.50%
Strategic	50									
Growth / Farmout Project / M&A	6.67%		Discretionary		Threshold	0	50	100	150	3.34%
Management of Non-Core Investments, Contract Commitments etc.	6.67%		Discretionary		Threshold	0	50	100	150	3.34%
Financing Initiatives	6.66%		Discrecional		Target	0	50	100	150	6.66%
									Total (1)	89.22%

(1) Corporate performance goals account for 80% of the executive officer's short-term incentive with the remaining 20% attributable to individual performance metrics. The total achieved for corporate performance goals in 2024 was 89.22% which is multiplied by 80% to equal 71.38%. Executive officers received this plus an additional 7 – 15% for their individual performance goal.

5 Management of climate-related risks and opportunities

5.1. Disclosure scope in relation to the tcfd framework recommendations

Risk management

This report discloses Canacol's action against recommendations a, b and c of the "Risk Management" element of the TCFD framework:

Describe the organization's processes for identifying and assessing climate related risks.
Describe the organization's processes for managing climate-related risks.
Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

5.2. Risks and opportunities detail

5.2.1. Canacol's comprehensive management system for impacts, risks, and opportunities (CMRS)

The comprehensive management of impacts, risks, and opportunities is inherent to Canacol's corporate strategy, and its purpose is to create and protect value in the short, medium, and long term, supporting decision-making at all levels of the organization to contribute to the achievement of its strategic objectives. Our comprehensive risk management system adheres to the ISO 31000 standard and is based on the Company's Risk and Opportunity Management Policy, which formalizes our business commitments in this area. This policy enables the efficient management of impacts, as well as operational, tactical, strategic, and emerging risks, and allows for the identification and leverage of potential opportunities for our operations and value chain. This risk system follows a cyclical five-step process (figure 8):

Figure 8. Canacol's comprehensive risk and opportunity management process

- **Step 1 – Identification:** Identification of impacts, opportunities, and operational, tactical, strategic, and emerging risks that could affect the Company's corporate objectives and/or its ability to create value.
- **Step 2 – Analysis:** Collection and analysis of information for each identified impact, opportunity, and risk, with the aim of building the necessary knowledge to carry out the evaluation and treatment process.
- **Step 3 – Evaluation:** Assessment and prioritization of the identified impacts, opportunities, and risks based on their likelihood of occurrence and severity, to understand the magnitude of their potential effects on business objectives and value creation capacity.
- **Step 4 – Treatment:** The most relevant or prioritized impacts, opportunities, and risks form the basis for decision-making regarding their treatment. This step focuses on proposing and implementing management actions for the identified items. Treatment options include escalate, avoid, transfer, mitigate, or accept (for risks or impacts); and escalate, exploit, share, enhance, or accept (for opportunities).
- **Step 5 – Monitoring and measurement:** This step focuses on periodically and annually measuring Canacol's progress and performance in implementing the treatment of the most significant opportunities, impacts, and risks.

The monitoring and development of the Risk and Opportunity Management System is the responsibility of the Quality and Risk Coordination team under the ESG Management Officer, reporting to the Chief Executive Officer, who is responsible for continuously reviewing the policies and processes to efficiently identify, assess, and govern Canacol's risk profile.

To ensure the effectiveness of the Company's risk management process, the Board of Directors, through its Audit and ESG Committees, oversees

the processes, controls, and procedures that enable the effective identification, assessment, management, and monitoring of business risks and opportunities, including those related to climate. The Board plays a key role in guiding the Company's efforts to manage these uncertain events or conditions. For more information on the Company's Risk and Opportunity Management process, please consult the following link: Click here

In 2024, the main strategic and emerging risks were identified and managed, as presented in Figure 9. These events were assessed based on their likelihood and their potential impact in the regions where the Company operates, across four dimensions: i) Loss of business value (financial analysis); ii) License to operate / reputation; iii) Impact on people; and iv) Impact on the environment.

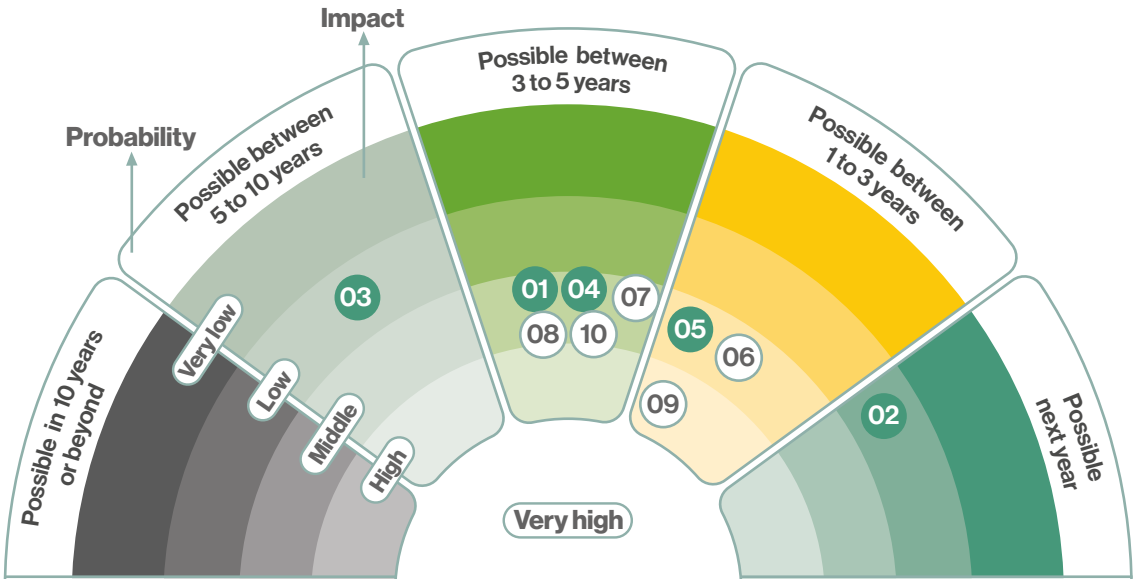
Figure 9. Canacol's risk map

Strategic risks

01 Reserve replacement rate <100%
02 Competition from imported gas in Cartagena
03 Increase in the supply of alternative energies with an impact on gas sales
04 Ability to adapt to environmental issues due to changes in project planning, delays in obtaining approval of applications, licenses and management plans with government entities
05 Availability of financial resources for the fulfillment of the Commitments/obligations with the ANH and/or additional exploratory activities

Emerging risks

06 Social discontent
07 Unexpected extreme weather events
08 Materialization of critical vulnerabilities
09 Shortage of goods and services in operations
10 Government discouragement of hydrocarbon production



Presentation of the assessment (impact X likelihood of occurrence) for residual risk (analysis after applying controls or mitigation measures).

I. **Strategic:** associated with the Company's strategic planning and its relationship with the environment.
II. **Emerging:** new or unexpected risks that may have a long-term impact on the Company and its operations.

In terms of climate change, the emerging risk of unexpected extreme weather events stands out. Based on our analysis supported by the Company's defined probability and impact scales, this risk presents a high level of residual risk.

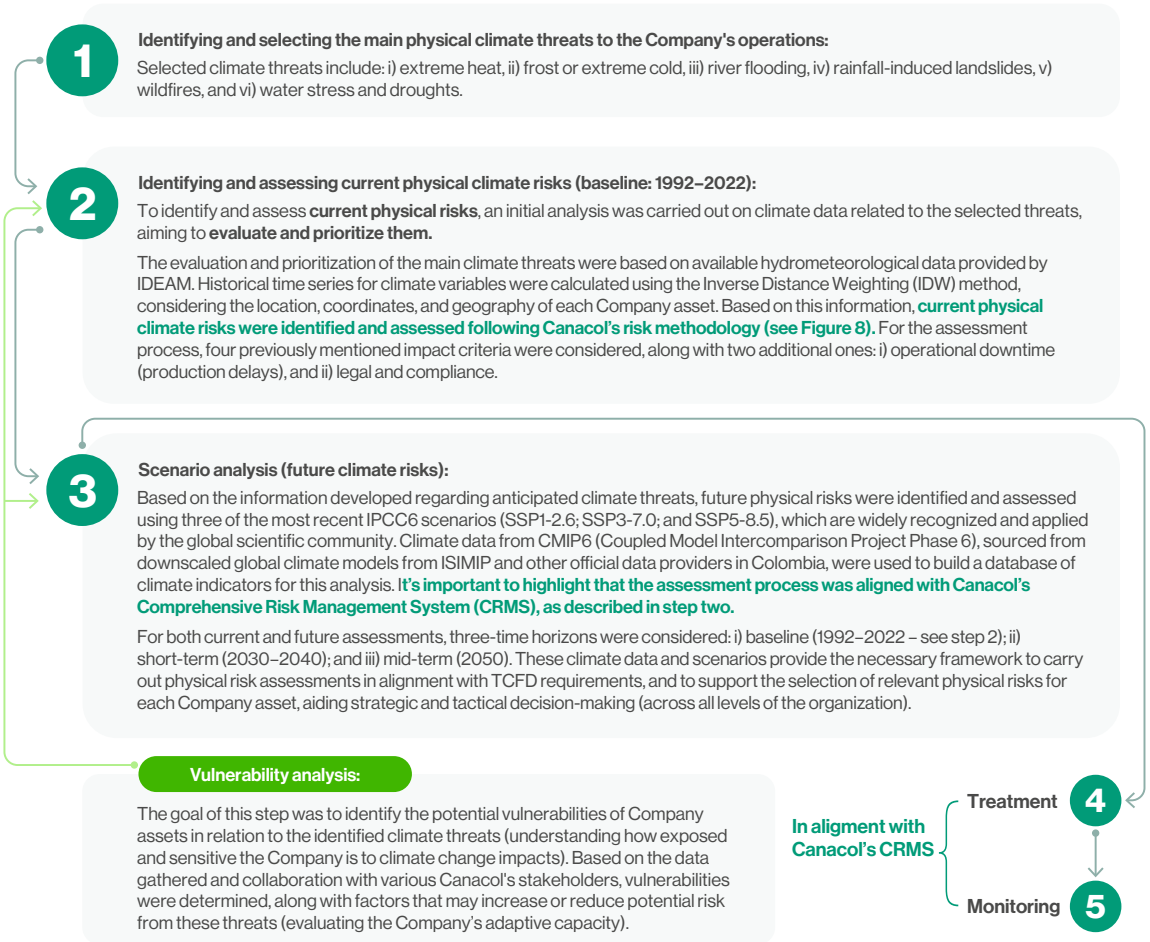
5.2.2. Integration of climate-related risk and opportunity management into Canacol's comprehensive risk management system

During the development of methodologies for identifying, assessing, and managing Canacol's physical and transition climate-related risks and opportunities, the ESG Management Officer with the support of the Sustainability Management Committee, ensured the integration of these processes into the Company's internal systems. Below is a description of the methodology followed for managing climate change-related impacts, risks, and opportunities at Canacol:

5.2.2.1. Identification, assessment and management of climate-related physical risks[4]

The ESG Management Office, with the support of a specialized consultant, developed the process for identifying and assessing physical climate-related risks, based on an in-house methodology aligned with the recommendations of the TCFD reporting framework. Below are the key steps established, highlighting how this climate risk management process is integrated into the Company's Comprehensive Risk Management System (CRMS) (highlighted in green):

FIGURE 10. Description of Canacol's process for identifying, assessing, and managing climate-related physical risks.*



4 For Canacol, climate-related physical risks are those associated with the direct impacts of climate change on the physical environment, such as extreme weather events (acute physical risks) or sustained (long-term) changes in climate patterns (chronic physical risks). These risks can potentially impact ecosystem services (natural resources), cause damage to infrastructure, affect human resources, disrupt the supply chain, and lead to other financial and socio-environmental consequences.

Identified, Evaluated, and Considered Climate Threats in the Physical Risk Assessment

The prioritized facilities for the physical risk analysis correspond to those of greatest strategic importance (operational and financial) for the Company. These are the stations of: **i)** Jobo, which also operates a small-scale liquefied natural gas plant; **ii)** Betania; **iii)** Clarinete; **iv)** Pandereta; and **v)** Níspero.

For each asset, coordinates and location were identified, allowing for the extraction of specific information about its geography (slopes, land cover, proximity to water bodies, among others), as well as targeted queries to the global climate database.

This initial analysis enabled the identification and assessment of physical risks, in accordance with the methodologies adopted by Canacol in its integrated risk management system (tables 11 and 12).

The data consulted were processed according to the methods indicated for each climate threat (table 6) and considering the selected reference time horizons, which, in alignment with the Company's climate strategy, correspond to: i) baseline, 1990–2022; ii) short term, until 2030; iii) medium term, until 2040; and iv) long term, until 2050.

Table 6 . Climate threats considered in Canacol's physical risk assessment

Threat	Brief description of the threat	Climate indicators selected for Canacol's climate risk analysis	Source of the selected indicator
Extreme heat	Long periods of intense heat and humidity, with temperatures significantly warmer and/or more humid than average.	Warm spell duration index (days)	Defined by the Spanish State Meteorological Agency (AEMET) as the number of days with maximum temperatures above the 95th percentile of historical records for more than 3 consecutive days.
Frost or extreme cold	Cold conditions refer to very low temperatures or temperatures lower than the normal or acceptable range.	Cold spell duration index (days)	Defined by the Spanish State Meteorological Agency (AEMET) as the number of days with minimum temperatures above the 95th percentile of historical records for more than 3 consecutive days.
River flooding	River flooding occurs in areas with flat landforms, nearby water bodies, and daily precipitation exceeding the 95th percentile of historical records.	Number of days (days)	Defined for areas with flat landforms, nearby water bodies, and recurring daily precipitation above the 95th percentile for 7 consecutive days.
Rainfall-induced landslides	Landslides or mass movement processes occur in areas with slopes greater than 7% and daily precipitation exceeding the 95th percentile of historical records.	Rainfall-induced landslide index (number of days with potential landslide event)	Based on the methodological guide from the Colombian Geological Service for assessing mass movement hazards. Defined for areas with slopes greater than 7% and recurring daily precipitation above the 95th percentile for 7 consecutive days.

Threat	Brief description of the threat	Climate indicators selected for Canacol's climate risk analysis	Source of the selected indicator
Wildfires	Droughts lasting more than 60 days in areas with vegetation cover that has pyrochemical or combustible potential, which could lead to uncontrolled wildfires, often in rural areas.	Wildfire danger index (number of days with fire-conducive weather conditions)	According to the same methodological guide, defined for areas with slopes greater than 7% and recurring daily precipitation above the 95th percentile in land covers with pyrochemical potential. The threat is activated where there are forest covers, transitional vegetation, forest plantations, or unirrigated grasslands.
Water stress and drought	Occurs when available soil moisture is reduced, and atmospheric conditions lead to ongoing water loss through transpiration or evaporation due to rising temperatures in nature.	Number of days (days)	Based on the Standardized Precipitation Index (SPI), recommended by the WMO. Calculated using a 60-day moving average. A drought period is considered when the index recurs over 30 consecutive days.

The focus on extreme weather events, such as storms, floods, heatwaves, or droughts, is an integral part of the natural threats analysis. . The frequency, intensity, and duration of these events provide a detailed view of the threats faced by a specific region, location, or asset. The application of climate models and specific modeling tools enables the simulation of potential natural threat scenarios.

Canacol extracted climate change threat projections directly from the European Union's COPERNICUS platform, which is supported by the Coupled Model Intercomparison Project Phase 6 (CMIP6).

The baseline was constructed based on the annual average for the period from 1990 to 2022 and was defined for each of the Company's assets. Specifically, projections of variables such as precipitation and temperature were analyzed, as well as their trends over time, in accordance with the selected time horizons and the climate scenarios adopted from the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR6): SSP1-2.6 (Optimistic), SSP3-7.0 (Intermediate), and SSP5-8.5 (Pessimistic)[5].

Approximately 31 different climate models were processed, and those that showed the best fit to the historical data corresponding to the location of each asset were selected. The data obtained enabled detailed analyses of various climate events, including their frequency, intensity, and duration. As an example, the absolute data of the analyzed threats for the Betania substation are presented (table 7), as well as the data considering the return periods of extreme climate events (table 8).

5 SSP1-2.6 (Sustainability): Low population growth, high economic growth, high levels of education, good governance, a globalized society, international cooperation, technological development, and environmental awareness. Under these assumptions, this scenario represents low levels of mitigation and adaptation challenges.
SSP3-7.0 (Fragmentation): High population growth and low economic development, lower levels of education, a regionalized society with little environmental awareness, representing a high level of adaptation and mitigation challenges.
SSP5-8.5 (Fossil-Fueled Development): This scenario assumes a very high dependence on fossil fuels, with low population growth, high economic growth, and high human development; thus, it represents a high level of mitigation challenges.

Table 7. Absolute data on climate threats – Betania asset

Climate Threat	Climate Indicator	Scenarios											
		Absolute Data											
		SSP1-2.6				SSP3-7.0				SSP5-8.5			
		Base Line	2030	2040	2050	Base Line	2030	2040	2050	Base Line	2030	2040	2050
Extreme Heat	Warm spell duration index (days)	14	19	24	20	14	16	22	26	14	17	26	55
Extreme Cold	Cold spell duration index (days)	0	0	0	0	0	0	0	0	0	0	0	0
Water stress and drought	(days)	118	139	117	110	118	154	135	116	118	143	107	145
Rainfal-induced landslides	Rainfall-induced landslide index (Number of days with a potential landslide event)	0	0	0	0	0	0	0	0	0	0	0	0
Wildfires	Wildfire danger index (Number of days with weather conditions conducive to fire)	141	139	117	147	141	154	135	150	141	143	107	168
River Flooding	(days)	14	10	19	11	14	14	8	11	14	12	13	15

Table 8. Data considering the return periods of climate threats – Betania asset

Climate Threat	Scenarios											
	Return Periods (Years)											
	SSP1-2.6				SSP3-7.0				SSP5-8.5			
	Base Line	2030	2040	2050	Base Line	2030	2040	2050	Base Line	2030	2040	2050
Extreme Heat	7,13	3,40	3,01	3,14	7,13	2,75	3,86	3,39	7,13	3,68	3,62	3,16
Extreme Cold	0	0	0	0	0	0	0	0	0	0	0	0
Water stress and drought	14,97	5,08	7,71	5,41	14,97	8,26	8,17	11,61	14,97	9,93	8,88	8,71
Rainfal-induced landslides	0	0	0	0	0	0	0	0	0	0	0	0
Wildfires	26,29	6,49	3,27	5,73	26,29	8,16	7,64	8,95	26,29	9,50	8,73	8,65
River Flooding	16,05	4,51	4,40	5,71	16,05	5,47	3,29	5,38	16,05	6,51	5,65	5,77

After extracting climate data for each asset across all scenarios and time horizons considered, risk scores were assigned for each threat. The scoring was determined based on the duration in days of the corresponding climate index and the associated return period. We present an example for defining the threat category associated with extreme heat (table 9), considering the following relationships between event duration and its probable frequency (return periods):

Table 9. Climate threat "heat waves (extreme heat event)" - risk scoring source

		Duration (consecutive days)				
		>30 days	21 to 29 days	15 to 20 days	7 to 14 days	3 to 6 days
Return Period (years)	0-2 years	5	5	5	4	4
	3-5 years	5	5	4	4	3
	6-10 years	5	4	4	3	2
	11-50 years	4	4	3	2	1
	51-100 years	4	3	2	1	1

Score Value: i) Very High = 5; ii) High = 4; iii) Moderate = 3; iv) Low = 2; and v) Very Low = 1.

Finally, the consolidated final risk scoring matrix by climate threat is presented, considering the different climate scenarios and proposed time horizons, as well as the return period in years, for Betania (Table 10):

*Table 10. Risk scores by climate threat considering event return period in years – Betania asset**

Risk Scores by Climate Threat – Considering Event Return Period (In Years)													
Climate Threat	Climate Indicator	Scenarios											
		SSP1-2.6				SSP3-7.0				SSP5-8.5			
		Base Line	2030	2040	2050	Base Line	2030	2040	2050	Base Line	2030	2040	2050
Extreme Heat	Warm spell duration index (days)	3	4	4	4	3	5	5	5	3	4	5	5
Extreme Cold	Cold spell duration index (days)	0	0	0	0	0	0	0	0	0	0	0	0
Water stress and drought	(days)	3	4	3	3	4	4	4	4	4	4	2	4
Rainfal-induced landslides	Rainfall-induced landslide index (Number of days with a potential landslide event)	0	0	0	0	0	0	0	0	0	0	0	0
Wildfires	Wildfire danger index (Number of days with weather conditions conducive to fire)	4	4	4	4	4	4	4	4	4	4	4	4
River Flooding	(days)	4	5	5	5	4	5	5	5	4	5	5	5

Score Value: i) Very High = 5; ii) High = 4; iii) Moderate = 3; iv) Low = 2; and v) Very Low = 1.

Identification and assesment of physical risks for Canacol's assets

For each asset, and based on the previously selected, evaluated, and prioritized climate threats, the identification and assessment of current and future physical risks that could affect Canacol were carried out. The assessment of identified physical risks was conducted in alignment with the Company's internal risk management system, considering the consequences that each event could have on various receptors, namely: people, the assets and/or operations (production delays), the environment, finances, license to operate/reputation, and legal compliance. Table 11 specifies the risk assessment criteria, considering the severity of consequences (impact scale).

Table 11. Criteria for valuation of physical climate risks – impact or consequence (alignment with Canacol's ERM)

Categories							
Consequence		People (P)	Asset (A) / Operations (O)	Environmental (E)	Financial (F)	License to operate/ Reputation (R)	Legal and compliance (LC)
5	Very high	Fatality.	Downtime greater than 15 days.	Severe and possibly irreparable environmental damage. Recovery period longer than one year. Loss of environmental license.	Business value loss: > USD 50M	International reputational impact. Coverage by international media. Rejection from shareholders and public at an international level.	Non-compliance with regulations resulting in loss of license to operate or criminal charges.
4	High	Lost-time accident. Severe injury or permanent disability of unpredictable duration.	Downtime between 5 and 15 days.	Impact on a sensitive area. Major sanctions or temporary suspension of licenses by authorities. Severe environmental damage or impact on a large area.	Business value loss: >10M USD - 50M USD	Loss of license to operate. Coverage by national media in the medium term. Severe reputational damage.	Non-compliance with regulations leading to sanctions: temporary suspension.
3	Medium	Lost-time accident. Minor injuries causing temporary disability lasting more than 24 hours.	Downtime from 1 to 5 days.	Event may cause interference with the environment. Impact on a sensitive area (outside the operational area) and on natural resources of nearby communities, with recovery between one and six months.	Business value loss: >1M USD - 10M USD	Impact on relationships with regulators, industry, and suppliers at the regional level.	Non-compliance with regulations not leading to sanctions (e.g., fines, warnings).
2	Very low	Injury or illness without disability or with job reassignment of the worker.	Downtime less than 24 hours.	Impact on a sensitive area or outside the operational area. Major sanctions or temporary suspension of licenses by authorities.	Business value loss: 100K USD - 1M US	Non-compliance with third-party agreements at the regional level. Event covered by regional media.	Non-compliance with regulations without legal consequences.
1	None	No cases of harm to the health or safety of the workforce.	No production downtime due to the occurrence of the event.	No impact of any kind, or impact only within internal facility areas with recovery in a matter of days.	Business value loss: <100K USD	Complaints from third parties and local communities.	Non-compliance with best practices.

Additionally, table 12 presents the risk level scale based on the assessment of impacts and the likelihood of occurrence.

*Table 12. Criteria for valuation of physical climate risks – risk level in relation to impact and probability scales (alignment with Canacol's CMRS)**

Qualitative likelihood			No known occurrence in the industry	It has happened in the O&G industry	Occurs sporadically in the industry	Likely to occur in the operation	Commonly occurs in the O&G industry
Return period of the event			May occur in 10 years or more	May occur within 5–10 years	May occur within 3–5 years	May occur within 1–3 years	May occur within the next year
			Likelihood				
			1	2	3	4	5
Severity of conse-quences	Very High	5	5	10	15	20	25
	High	4	4	8	12	16	20
	Medium	3	3	6	9	12	15
	Vey low	2	2	4	6	8	10
	None	1	1	2	3	4	5

Risk Level: i) Red - Very High (20-25); ii) Orange - High (10-19); iii) Yellow - Medium (4-9); and iv) Green - Low (1-3)

Finally, table 13 presents a summary of the results of the physical climate risk analysis for Betania, considering risks with a high or medium rating level, as these are categorized as the most material or relatively significant for Canacol.

Table 13. Synthesis of the physical risks associated with climate change identified and evaluated for the Betania asset.

Climate threat / event:	Risk	Risk receptor – affected area:	Specific climate scenario	Time horizon	Risk level
Extreme heat / Heat wave	Impact on the health of the workforce, especially those working outdoors or in confined spaces, due to exposure to high temperatures.	People	SSP1- 2.6	2030-2040-2050	Medium
			SSP3- 7.0	2030	High
				2040-2050	Medium
			SSP5- 8.5	2030-2040-2050	Medium
	Impact on equipment and its integrity, as well as on gas treatment processes, due to extreme heat exposure.	Asset / operations	SSP1- 2.6 SSP3- 7.0 SSP5- 8.5	2030-2040-2050	Medium
Extreme heat / Hailstorm	Hailstorms with larger hailstones that could cause damage upon impact on rooftops, potentially affecting buildings.	Asset / operations	SSP5- 8.5	2050	Medium
Wildfires	Wildfires, heat exposure, flames, and smoke causing harm to people, assets, operations, and nature.	People Asset / operations	SSP1- 2.6 SSP3- 7.0	2030 – 2040	Medium
			SSP5- 8.5	2030-2050	Medium
River flooding	Increased precipitation (rainfall events above the 95th percentile of historical data series) and overflow of surface water bodies near the Betania plant.	People Asset / operations Environment	SSP1- 2.6 SSP3- 7.0 SSP5- 8.5	2030-2040-2050	Medium

Management of physical climate risks

Our internal risk management system establishes processes to manage various business risks and opportunities, including those related to climate (figures 8 and 10; steps 4 and 5 - treatment and monitoring, and measurement, respectively). Regarding risk treatment, Canacol relies on the following definitions:

Treatment of inherent risks:

- **Manageability:** This element refers to the degree of control that Canacol has over the risk, which can be categorized as high, medium, or low.
- **Inherent risk level:** This assessment allows the Company to visualize and understand the criticality of the analyzed risk to define its treatment.
- **Treatment, control, and/or prevention plan for inherent risk:** As part of this activity, proposed treatments and controls are defined to ensure the appropriate management of the identified risk (residual risk).

Residual risk assessment:

This process involves defining a new probability and impact value for the identified risk after implementing one or more treatments that could potentially reduce the initial estimated risk level (inherent risk level).

- **Residual risk level:** This value indicates how critical the risk is "now," after defining control measures or a prevention plan.

Final definition of treatment for residual risks:

Treatment strategies represent the actions through which Canacol responds to the residual risk:

- **Escalate:** Applied when the risk level exceeds the authority or management capacity of the process manager, requiring a decision at a higher level.
- **Avoid:** Involves eliminating the threat to protect the process or project under analysis.
- **Transfer:** Entails transferring ownership of the risk to a specialized third party who assumes its management (e.g., through insurance or contracts).
- **Mitigate:** Measures are adopted to reduce the probability of occurrence or impact of the threat.
- **Accept**: The risk is acknowledged, but proactive actions are considered unnecessary due to its low impact or probability.

Contingency plan:

Represents the proposed strategy in case the risk materializes, contemplating activities that mitigate or reduce the impact derived. Regarding monitoring and measurement, Canacol relies on the following definitions:

- **Monitoring:** This refers to the assignment of follow-up dates and responsible parties for managing each material risk of the Company. The frequency of analysis depends on the duration of the evaluated activity, according to its scope and context, allowing for appropriate monitoring throughout its duration to ensure the achievement of desired objectives.
- **Execution Progress / Progress Analysis:** This is the percentage of completion of proposed risk management activities, measured quarterly.
- **Observations:** This refers to relevant information regarding risk management, recorded by each responsible party, allowing for the traceability of the activities undertaken for this purpose.
- **Status:** This is the description of the current state of the risk in terms of "open (latent, transferred, or accepted)" or "closed (not materialized, controlled materialization, or uncontrolled materialization)." This outcome impacts the strategic indicator concerning the performance evaluation of the process or leader in charge.

Example of implementation of the physical climate risk management process

Below, we will describe an example of the management measures proposed and their progress during the reporting year concerning the identified material physical climate risks for Betania, derived from the threat of heat waves.

According to our Comprehensive Risk Management System, the risk level is determined based on the highest rating among the various impact criteria analyzed, including financial impact. In the case of risks number 1 and 2 in this example, this rating corresponds to the criteria of people and operations, respectively (table 14).

Table 14. Summary matrix for climate risk management for the Betania asset in relation to the "heatwave" threat

Climate threat / event	Derived risk	Risk level	Financial impact (USD)	Management strategy	Proposed management measures	Progress 2024During 2024, the maximum temperature recorded at the Betania asset (Pueblo Nuevo, Córdoba - Colombia), was 38°C
Heat waves / Extreme heat	**1.** Impact on the health of the workforce, especially those working outdoors and in confined spaces due to exposure to high temperatures.	High	**LOW:** Range between 670,760 and 2,612,942	Mitigation	1. Formulate and implement occupational health and safety programs aimed at controlling and monitoring body temperature, ambient temperature, blood pressure, as well as adequate hydration plans for the workforce (understood as the sum of personnel with direct employment ties plus contractors) who are exposed to high temperatures during field activities in operations (outdoors or in confined spaces with high heat concentration) or who are exposed to direct solar radiation for long periods of time.	In 2024, pre-operational meetings were held, where pertinent measures were taken in response to the aforementioned climate risk: *Throughout the fiscal year, Personal Protective Equipment (PPE) was monitored, as well as the hydration of employees and contractors every 10 minutes. *Additionally, periodic deliveries of sunscreen were made to each operational point, or in the field, promoting its use to prevent skin damage. *Daily preventive certification processes were also implemented, with employee checks performed before starting their work. *In closed areas or confined spaces, critical tasks were certified, including ambient CO2 measurements. Oxygen and thermal comfort measurements (workers' perception of the temperature in the work area) were also taken.
					2.Raising awareness about good practices and the signs and symptoms of illnesses associated with extreme heat, such as heat exhaustion, the importance of good hydration, the use of sunscreen to prevent sunburn, dehydration, decreased level of consciousness due to heatstroke, seizures, ataxia, behavioral changes, hyponatremia, among others.	*During 2024, weekly talks were held on health, heat stroke, dehydration, ultraviolet (UV) radiation exposure, skin care, and other topics. *Likewise, information regarding the World Health Organization's (WHO) Epidemiological Bulletin was shared. *In addition, staff took mandatory first aid courses through e-learning platforms, with a focus on burn care. *Finally, first aid courses were provided, focusing on cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) management, including topics on how to react to heat stroke, fainting, or other related health events.
					*During 2024, weekly talks were held on health, heat stroke, dehydration, ultraviolet (UV) radiation exposure, skin care, and other topics. *Likewise, information regarding the World Health Organization's (WHO) Epidemiological Bulletin was shared. *In addition, staff took mandatory first aid courses through e-learning platforms, with a focus on burn care. *Finally, first aid courses were provided, focusing on cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) management, including topics on how to react to heat stroke, fainting, or other related health events.	*Regarding PPE, safe work control analysis processes were implemented to mitigate the risk of exposure to heat and UV rays. This was supervised and managed through each employee's safety cards. *The PPE matrix was also updated, specifically establishing all the personal protective equipment that must be used as a response measure to the aforementioned risk. *Currently, the main PPE that mitigates the aforementioned risk are: long-sleeved shirts and pants made of cotton, a textile that the industry has identified as the most suitable for the prevailing environmental conditions on site.

Climate threat / event	Derived risk	Risk level	Financial impact (USD)	Management strategy	Proposed management measures	Progress 2024During 2024, the maximum temperature recorded at the Betania asset (Pueblo Nuevo, Córdoba - Colombia), was 38°C
Heat waves / Extreme heat	**1.** Impact on the health of the workforce, especially those working outdoors and in confined spaces due to exposure to high temperatures.	High	**LOW:** Range between 670,760 and 2,612,942	Mitigation	4.Design and establish formal procedures as part of Canacol's GIS, which specify how outdoor activities should be carried out when there are high or extreme ambient temperatures, in relation to the heat stress traffic light that considers the maximum usual temperatures at the operating site: **Red:** outdoor activities are suspended due to high temperatures (45-50°C); **Orange:** 2 hours of rest per workday or activity (40-44°C); **Yellow:** 1 hour of rest per workday or activity (34-39°C); **Green:**It is possible to operate without stopping the working day or activity (20 - 33°C).	*Due to the weather conditions in Betania in 2024, outdoor work shifts were conducted with a maximum of 3 hours. *Operational inspections were conducted of tents, hydration coolers for outdoor activities, among others.
	2. Impact on equipment and its integrity, as well as on gas treatment and natural gas liquefaction processes due to exposure to extreme heat.	Medium	**LOW:** Range between 108,806 and 159,255	Mitigation	1. Review and adjust the planning and execution of preventive maintenance routines and plans for equipment, piping, and instruments, among others. Include temperature variables in maintenance planning and anticipate corrective maintenance plans based on criticality analysis of the most susceptible equipment components and the use of materials with improved specifications to withstand high temperatures.	*In 2024, we updated the preventive maintenance plan, which is planned in the "IBM Maximo" tool, for equipment susceptible to high temperatures (flow, pressure, and temperature transmitters, motor compressors, generators, custody transfer point analytical equipment, and LNG cryobox liquefaction units).
					2. Increase the frequency of inspections for signs and processes of corrosion in pipelines and flow lines, and protect against high moisture content and thermally insulate process areas where these variables could potentially affect the gas treatment process.	*During the reporting year, we performed integrity maintenance on tanks, flow lines, process equipment, and accessories, where the onset of corrosion was evident. *Currently, the natural gas dew point treatment subsystems are thermally jacketed at the four gas treatment plants at the Jobo station to prevent the process from being affected by high ambient temperatures. The gas previously treated at the Betania substation arrives at Jobo (main station) to continue its process.

In Chapter 6, "Climate Change Strategy," we will present a detailed description and analysis of potential financial impacts for the high-materiality physical risks of the Betania asset, which has been selected in this report as the operational disclosure example.

5.2.2.2. Identification, assessment, and management of climate-related transition risks[6]

Like the approach to physical risks, the ESG Management developed the process for identifying and assessing climate-related transition risks, aligned with the recommendations of the TCFD framework.

This process was fundamentally based on the analysis of Canacol's internal contextual information, as well as the examination of external context information, including the review of transition scenarios developed by the International Energy Agency and relevant international and national climate-related documentation. Additionally, it considered physical climate data previously collected and processed, as described in Section 5.2.2.1.

Leveraging these inputs, the following methodological steps were applied to identify, assess, and manage transition risks in alignment with the Company's Comprehensive Risk Management System:

Figure 11. Description of Canacol's process for the identification, assessment, and management of climate-related transition risks.

6 Canacol understands transitional risks, such as the uncertain events arising from the transition to a low-carbon economy, which guide the actions required for climate change mitigation and adaptation. These risks can result in significant political, legal, technological, and market changes, ensuring that various productive or service activities identify and implement various actions to improve their climate resilience.

Each economic assessment is calculated as a measure of financial impact in a specific formulation. In cases where insufficient information is available to identify variables for a specific formulation, an analysis of arguments and data is conducted to help Canacol determine potential financial impacts associated with the consequences arising from the risks. For analytical purposes, significant risks are those whose assessment yields a risk level greater than 4.

Understanding canacol's external and internal context and data processing, projections, and information

To initiate the identification of transition risks, a corporate diagnostic process was carried out with a focus on operations and the corporate management of climate change. This comprehensive assessment of the Company's current state involved conducting interviews with various areas, including sustainability and risk management. This approach enabled the analysis and construction of a corporate baseline, serving as a guiding input for the identification of transition risks.

Regarding the external context, the central reference for this study was the IEA, specifically the STEPS, APS, and NZE2050 scenarios, on which the risk analysis was based. It is important to highlight that the APS and STEPS scenarios are exploratory in nature, as they establish a set of initial conditions — such as existing policies and announced targets — and project their evolution based on energy models that incorporate market dynamics and technological advancements.

Additionally, two flagship reports from the IEA served as external inputs for the analysis of the international context: the World Energy Outlook 2021 and 2022, as well as the TCFD reporting framework requirements, the October 2023 TCFD Status Report, and the 2023 Global Risks Report by the World Economic Forum.

Finally, regarding the national context, the 2022–2052 National Energy Plan Update was the primary reference. However, other relevant documents were also reviewed, including the 2023 Colombia Country Climate and Development Report prepared by the World Bank Group, among others[7].

Identification and assessment of transition risks for canacol

The transition risks associated with climate change were identified and assessed considering two main categories: i) Canacol's businesses within the natural gas value chain and its operations, and ii) the operations and market for LNG.

7 Main national information sources consulted: i) Colombia – Country Climate and Development Report, Colombia. World Bank, 2023; ii) Update of the National Energy Plan 2022-2052, Volume I, Mining and Energy Planning Unit (UPME), 2023; iii) Colombia 2023 – Energy Policy Review, International Energy Agency (IEA); iv) National Greenhouse Gas Emissions Trading Program (PNCTE); v) Colombia's Long-Term Climate Strategy E2050 to meet the Paris Agreement, Ministry of Environment, National Planning Department, Ministry of Foreign Affairs, AFD, Expertise France, WRI, 2021.

Additionally, in line with TCFD recommendations, this assessment maintained the suggested categories for transition risks, which were independently analyzed to evaluate the Company's risks:

Table 15. Classification of transition risks in alignment with the TCFD framework

	Description
Political and Legal Risks	Policy actions for climate change management can be classified into two main approaches: Mitigation: Actions aimed at limiting activities that contribute to adverse climate effects. Examples include the implementation of carbon pricing mechanisms to reduce GHG emissions, transitioning to low-emission energy sources, adopting high energy efficiency solutions, promoting advanced water management measures, and encouraging sustainable practices related to land use and ecosystems. Adaptation: Actions focused on promoting resilience to climate consequences, such as the development of corporate capacity to resist, reducing vulnerability, and recovering from the impacts of this natural phenomenon. The level of risk and the financial impact associated with these changes will depend on the degree of preparedness of each organization to face the realization of these risks.
Technological Risk	Technological improvements and innovations that support the transition to a low-carbon and energy-efficient economy can have significant impacts on organizations. Emerging technologies such as renewable energy, battery storage, energy efficiency, and carbon capture and storage (CCS) will influence business competitiveness, production and distribution costs, and, ultimately, the demand for products and services by end-users. As these new technologies replace traditional systems and transform key components of the current economic system, a scenario of "creative destruction" unfolds, leading to both winners and losers. However, the primary uncertainty in assessing technological risk lies in the timing of when these technologies will achieve widespread adoption.
Market Risk	Markets can be affected by climate change in diverse and complex ways, with one of the main impacts being changes in the supply and demand of certain raw materials, products, and services, as the risks and opportunities associated with them are increasingly considered in decision-making processes.
Reputational Risk	Climate change is recognized as a potential source of reputational risk, arising from the evolving perceptions of customers, investors, or the community at large regarding the role an organization plays in the transition to a low-carbon economy, or its obstruction of that transition.

Under this context, Canacol conducted the identification and assessment of transition risks considering political, legal, technological, and market changes. This approach enabled the analysis of the potential implications of these elements for the Company's adaptation, considering the nature, timelines, and strategies associated with the changes, as well as the evaluation of the financial implications derived from each identified present and future risk.

As described in section 5.2.2.1, the assessment of transition risks was carried out in alignment with the Company's risk management system. For this analysis, the evaluation was conducted considering the potential consequences that each event could have on different receptors, namely: business value gain (financial analysis), license to operate/reputation, political and legal aspects, technological variables, and the market.

Table 16 specifies the criteria for assessing transition risks, considering the severity of the consequences (impact scale).

Table 16. Criteria for transition risk valuation - impact or consequence:

Categories						
Consequence		Market (M)	Technological (T)	Financial (F)	Reputation (R)	Political and Legal (PL):
5	Very high	Loss of key investors. Significant disruption in the supply chain. Loss of several major clients or a large share of sales/contracts. Significant negative impact on the company's value (e.g., stock price drop). Negative impact on operating costs due to the implementation of new policies.	Capital loss from low-efficiency or polluting technologies (higher operating costs). Increased emissions due to low-efficiency technologies. Emission leaks caused by the lack of adequate technologies. Increased cost of the decarbonization plan due to delayed implementation (outside the planning stage). Costs from failed technological transitions.	Business value loss: > USD 50M	International reputational damage. Coverage by international media. Rejection by shareholders and the public at the international level.	Non-compliance with regulations, resulting in Canacol losing its license to operate or facing legal action.
4	High	Loss of key investors. Supply chain disruption. Loss of several major clients or a large share of sales/contracts. Negative impact on operating costs due to the implementation of new policies.	Capital loss from low-efficiency or polluting technologies (higher operating costs). Increased emissions due to low-efficiency technologies. Emission leaks caused by the lack of adequate technologies. Increased cost of the decarbonization plan due to delayed implementation (outside the planning stage). Costs from failed technological transitions	Business value loss: >10M USD - 50M USD	Loss of license to operate. Coverage by national media in the medium term. Serious reputational damage.	Non-compliance with regulations leading to sanctions: temporary suspension.
3	Medium	Loss of key investors. Minor disruption in the supply chain. Loss of an important client.	Capital loss from low-efficiency or polluting technologies (higher operating costs). Increased emissions due to low-efficiency technologies. Emission leaks caused by the lack of adequate technologies.	Business value loss: >1M USD - 10M USD	Impact on relationships with regulators, industry partners, and suppliers at the regional level.	Non-compliance with regulations that do not result in sanctions (e.g., fines, warnings).
2	Very low	Minor disruption in the supply chain. Loss of a non-significant client.	Capital loss from low-efficiency or polluting technologies (higher operating costs). Increased emissions due to low-efficiency technologies. Emission leaks caused by the lack of adequate technologies.	Business value loss: 100K USD - 1M US	Impact on relationships with regulators, industry partners, and suppliers at the regional level.	Non-compliance with regulations that do not result in sanctions (e.g., fines, warnings).
1	None	Insignificant disruption in the supply chain. Loss of a non-significant client.	Capital loss from low-efficiency or polluting technologies (higher operating costs).	Business value loss: <100K USD	Complaints from third parties and local communities.	Non-compliance with best practices.

On the other hand, the risk level scale is structured based on the impact and likelihood assessment scales and remains consistent with the information presented in table 12 for physical risks.

Tables 17 and 18 below provide a summary of the results of the transition risk analysis for the categories "Canacol's businesses in the natural gas value chain and its operations" and "the operation and market for LNG," respectively. The analysis focuses on risks classified as high or medium, as these are considered the most material or relatively significant for Canacol.

Table 17. Summary of transition risks associated with climate change - identified and evaluated for the category "Canacol's business in the natural gas value chain and its operations"

Risk	Category	Time horizon		
		2030	2040	2050
		Risk level 2030	Risk level 2030	Risk level 2030
Progressive increase in the value of carbon credits and the imposition of carbon taxes to finance the energy transition and achieve the nationally determined contributions assumed by the Colombian government.	Market	Medium	Medium	Medium
	Technology	Medium	Medium	Medium
	Reputation	Low	Medium	Medium
	Political and Legal	Low	Medium	Medium
	Financial	half	High	High
Reduction in demand for natural gas on a global scale as a result of the energy transition.	Market	Medium	Medium	High
	Technology	Medium	Medium	Medium
	Reputation	Medium	Medium	Medium
	Political and Legal	Medium	Medium	Medium
	Financial	Medium	Medium	High
Lack of alignment with decarbonization strategies and disclosure of information related to climate change, which leads to negative perceptions due to the absence or inadequacy of climate action.	Market	Medium	Medium	Medium
	Technology	Low	Medium	Medium
	Reputation	Medium	Medium	Medium
Increased costs due to mandatory requirements for the generation, capture, recovery, and utilization of fugitive emissions and venting, as well as for the granting of quotas under the National Tradable Quota Program (ONCT) - Res. 40317 of 2023 and Title III of Law 2169 of 2021 and Law 1931 of 2018.	Market	Medium	Medium	High
	Technology	High	High	High
	Reputation	Medium	Medium	Medium
	Political and Legal	High	Medium	Medium
	Financial	High	High	High
Accelerated technological change is imminent, leading to the implementation of new, high-cost technologies that require technical capabilities unavailable in the Colombian market.	Market	Medium	Medium	High
	Technology	High	High	Medium
	Reputation	Medium	Medium	Medium
	Political and Legal	High	High	Medium

Table 18. Summary of transition risks associated with climate change - identified and evaluated for the category "lng operation and market"

Risk	Category	Time horizon		
		2030	2040	2050
		Risk level 2030	Risk level 2030	Risk level 2030
Gradual massification of hydrogen-based technologies with a direct impact on gas production and an increase in natural gas (NG) imports starting in 2040. Rejection of gray hydrogen in favor of lower-impact production technologies.	Market	Medium	High	High
	Technology	Medium	Medium	High
	Reputation	Medium	Medium	High
	Political and Legal	Medium	Medium	Medium
	Financial	Medium	Medium	High
Negative perceptions and loss of competitive advantages due to a slow technological transition toward the use of transitional fuels and increased pressure from external stakeholders on the natural gas business in the domestic and international markets.	Market	Medium	Medium	High
	Technology	Medium	Medium	Medium
	Reputation	Medium	Medium	High
	Political and Legal	Medium	Medium	Medium
	Financial	Medium	Medium	Medium
Natural gas supply contracts are expected to be negotiated on a shorter-term basis, in some cases even quarterly.	Market	Medium	Medium	High
	Reputation	Low	Medium	Medium
	Political and	Medium	Medium	High
	Legal	Medium	Medium	Medium
	Financial	Medium	Medium	Medium
Accelerated, high-cost energy transition to the use of natural gas due to compliance with public policies and national determined contributions from the Colombian Government that lead to promoting massive gas imports and a possible divestment in gas liquefaction assets.	Market	Medium	Medium	High
	Technology	Medium	Medium	Medium
	Reputation	Medium	Medium	Medium
	Political and Legal	Medium	High	High
	Financial	Medium	Medium	High

The consequences associated with each transition risk, as well as the probability assigned in its assessment, are based on arguments, projections, data, facts, assumptions, and statements contained in the scenarios of the International Energy Agency (IEA) selected for this analysis. This foundation was supplemented with public information from various national and international sources previously cited in this report. Additionally, the evaluation method used corresponds to the one adopted by the Company, which is outlined in Figure 11.

Management of transition climate-related risks

The risk management system establishes processes to manage all business risks and opportunities, including those related to the transition to a low-carbon economy (for this case, see figures 8 and 11; steps 4 and 5 – treatment and monitoring, and measurement, respectively).

In this context, the stages for managing transition risks are equivalent to those outlined in the section on the management of physical climate risks in this report.

Example of implementation of the transition risk management process

The following section provides an example of the management measures defined for two of the most relevant transition risks identified, based on the following categories: i) Canacol's businesses within the natural gas value chain and its operations, and ii) the operation and market for LNG. This example also includes the progress achieved in 2024 concerning the management activities planned for each risk.

According to our Comprehensive Risk Management System, the risk level is determined by considering the highest valuation among the impact criteria analyzed — including financial impact. For risks 1 and 2 in this example, the highest impact criteria correspond to Technology and Financial & Market, respectively (see table 19).

Table 19. Summary matrix of transition risk management

Transition risk	Risk typology	Category	Transition climate scenario	Risk level	Financial impact (USD)	Management strategy	Proposed management measures	Progress 2024
1. Increased costs due to mandatory requirements for the generation, capture, recovery, and utilization of fugitive emissions and venting, as well as for the granting of quotas under the National Tradable Quota Program (ONCT) - Res. 40317 of 2023 and Title III of Law 2169 of 2021 and Law 1931 of 2018.	Political and legal	Canacol's businesses in the natural gas value chain and its operations	All: APS, STEPS and NZE2050	High	**HIGH:** Range between 2,790,000 and 45,440,000	Mitigation	**1.**Implement the decarbonization strategy adopted by the Company with a vision for 2035 and 2050, paying special attention to the disclosure of information related to climate performance (progress), engagement with stakeholders, and ensuring the reliability and transparency of the data and information disclosed.	• 4.5% reduction in GHG emissions from our operations compared to 2023. • 9,602.2 MWh reduction in our total global energy consumption. Our electricity consumption was reduced by 7.4% compared to 2023. • Scope 3 emissions were reduced by 8.0% compared to 2023. • Start of implementation of the zero methane project to reduce GHG emissions. In 2024, methane emissions were reduced by 12.1% compared to 2023. • Strengthening of Canacol's climate change strategy, adopting a value chain approach. • Independent third-party verification of the quantification of GHG emissions from Scopes 1, 2, and 3. • Investment of USD $507,500 for climate change actions. • Development of the Company's Climate Change and Energy Efficiency Policy.
							2.Remain vigilant and strengthen monitoring of regulatory projects related to climate change management in the sector, through associations such as the Colombian Oil and Gas Association (ACP). Likewise, respond promptly to calls for proposals on the matter issued by relevant government entities.	• We continue to be part of the Natural Gas Sector Alliance: Path to Carbon Neutrality, in collaboration with NATURGAS and the Colombian Ministries of Environment, Mines, and Energy. We also continue to be part of the ACP. In 2024, our contribution to NATURGAS and ACP amounts to $378,500 USD.
2. Gradual massification of hydrogen-based technologies with a direct impact on gas production and an increase in natural gas imports starting in 2040. Rejection of gray hydrogen in favor of lower-impact production technologies.	Technolo-gical	The operation and the market for LNG	All: APS, STEPS and NZE2050	High	**NA:** The analyzed IEA data show that Latin American GDP growth is projected to reach 2.4% starting in 2023, followed by a projected stagnation until 2050. This financial indicator would indicate an economic limitation that could impact the technological transition of all sectors for the conversion and use of natural gas as a transition fuel.	Mitigation	**1.**Strengthen Canacol's commercial strategies to promote the Colombian initiatives outlined in the 2022-2052 National Energy Plan. This will help to increase the use of natural gas across all sectors of the economy through strategic alliances with national stakeholders, as well as to achieve a position and union participation that will enable it to exert pressure on government plans and decisions regarding the energy transition.	In 2024, Canacol Energy made significant progress toward strengthening its commercial strategies to align its operations with the initiatives established in the 2022-2052 National Energy Plan, focusing on the widespread use of natural gas in various economic sectors through strategic alliances and trade union initiatives. • **Massification of Natural Gas in Key Sectors:** ◦ **Strategic alliances:** New alliances were established with key players in the energy sector and with government institutions to promote natural gas projects in sectors such as transportation, industry, and power generation.

Transition risk	Risk typology	Category	Transition climate scenario	Risk level	Financial impact (USD)	Management strategy	Proposed management measures	Progress 2024
							Furthermore, technologies that do not use natural gas would see a decrease in cost; for example, the cost of a hydrogen electrolyzer in the STEPS scenario would go from USD 1,505/kW today to USD 445/kW in 2050; in the APS scenario, it would cost USD 265/kW, and in the NZE scenario, USD 230/kW by 2050.	• **Strengthening Union Participation:** ◦ **Union Leadership:** Canacol increased its participation in sector associations, positioning itself as a strategic player in the discussion on the energy transition in Colombia. ◦ **Influence on Public Policies:** task-forces were established with the government to influence policies that encourage the use of natural gas, promoting its adoption as a transition fuel. ◦ **Active dialogue:** Canacol actively participated in sectoral forums and public consultations, providing technical arguments on the role of natural gas in the country's energy mix. ◦ **Policy Proposal:** Specific proposals were presented to include natural gas in energy transition plans, highlighting its potential to reduce emissions and ensure energy security.

In Chapter 6, "Climate Change Strategy," we will provide a detailed description and analysis of the potential financial impacts derived from two of the most significant transition risks for the company, which have been selected in this report as the corporate disclosure example.

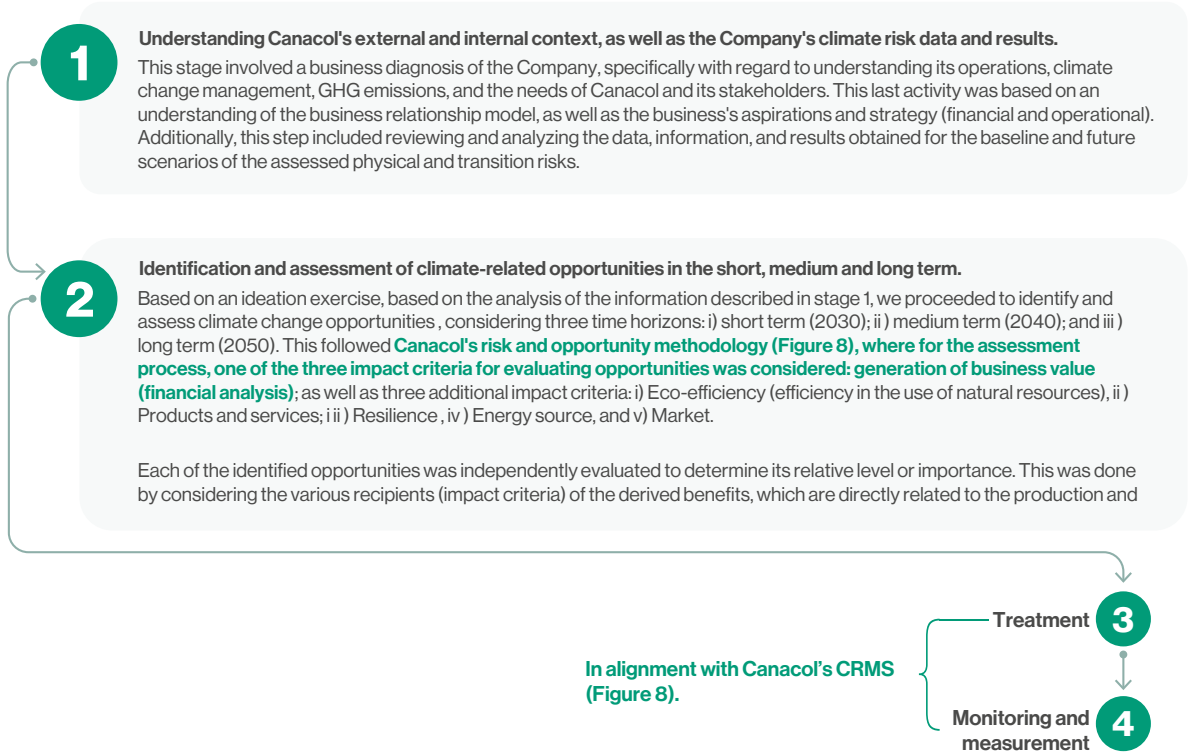
5.2.2.3. Identification, assessment, and management of climate-related opportunities[8]

The ESG Management comprehensively developed the process for identifying, assessing, and managing climate change risks and opportunities in alignment with TCFD recommendations. The process of identifying and assessing opportunities related to the transition to a low-carbon economy and/or physical aspects of climate change — both for the Company and its external environment, including the value chain — was based on a structured ideation exercise, grounded in the analysis of Canacol's internal context, as well as the data, information, and findings obtained during the evaluation of physical and transition risks.

For this purpose, the following methodology was applied, in alignment with the Company's risk management system:

8 Canacol understands climate-related opportunities as the potential benefits that can arise for the Company by strategically and sustainably addressing climate change and its impacts. Our company identifies and assesses these opportunities as an integral part of the business strategy, with the aim of creating and protecting value in the short, medium, and long term.

Figure 12. Description of Canacol's process for identifying, assessing, and managing climate-related opportunities.*



*Each economic assessment is calculated as a measure of financial impact in a specific formulation. In the absence of sufficient information to identify variables for a specific formulation, an analysis of arguments and data is conducted to help Canacol determine the potential financial consequences associated with the benefit of each opportunity. For analysis purposes, significant climate-related opportunities correspond to those whose evaluation yields a level above 4.

Understanding Canacol's external and internal context, and the data and outcomes of the Company's climate risks.

To begin identifying climate-related opportunities, a corporate diagnostic process was carried out with an emphasis on operations, corporate climate change management, and the needs and requirements of Canacol and its stakeholders. Additionally, this step included the consultation and analysis of the data, information, and results obtained for the development of the baseline and future scenarios of the evaluated physical and transition risks, according to the information reported in sections 5.2.2.1 and 5.2.2.2, respectively.

The comprehensive assessment of the Company's current state and the understanding of the data and results from the physical risk assessment enabled the execution of an ideation[9] exercise, the inputs of which served as a guiding foundation for identifying and evaluating climate-related opportunities.

9 The process of generating and developing new ideas and concepts can be supported by various techniques, including: 1) brainstorming: A method where a group generates many ideas to solve a problem or address a specific issue, 2) mind Mapping: Creating visual maps to explore connections between related ideas and concepts.
Creative Techniques: These include free association (connecting seemingly unrelated concepts), reversal (looking at a problem from the opposite angle), and others that encourage innovative thinking. These techniques aim to unlock creativity, stimulate new ways of thinking, and develop solutions or innovations within a given context.

Identification and assessment of climate-related opportunities for Canacol

The climate-related opportunities were identified and evaluated considering two categories: **i)** Canacol's business in the natural gas value chain and its operations, and **ii)** the operation and market for LNG. Additionally, this exercise incorporated the climate opportunity typology recommended by the TCFD framework, which were analyzed individually to assess the main benefits they could represent for the Company (Table 20).

Table 20. Classification of climate-related opportunities in alignment with the TCFD framework

Opportunity	Description
Market	Regarding the segments served and areas with potential for expansion, the Company identifies opportunities to venture into emerging sectors linked to the low-carbon economy, such as carbon markets, resilient infrastructure, and sustainable supply chains. This will enable Canacol to diversify its revenue streams and capitalize on new regulatory and social trends.
Products and services	These opportunities are geared towards innovation through the development of solutions that address the demands of an increasingly demanding and environmentally and socially conscious market. They include the design and adoption of low-carbon technologies, products with lower impacts, and services linked to the energy transition. This approach is based on the recognition that climate change can present favorable conditions, both current and future, aimed at strengthening Canacol's value propositions in the energy sector, with a focus on its natural gas offering.
Eco-efficiency (resource efficiency)	These opportunities aim to reduce costs and enhance competitiveness by optimizing the use of resources and energy, efficiently managing dependencies that impact operating costs (OPEX). This includes the adoption of more efficient technologies and processes, which can contribute both to emission reductions and to strengthening operational sustainability.
Resilience	Resilience opportunities involve defining and implementing actions aimed at strengthening operational continuity in the face of climate risks. This includes diversifying suppliers, investing in resilient infrastructure, and developing capacities in key actors within the value chain as part of the climate strategy. This resilience can translate into competitive advantages and cost reductions associated with operational disruptions.
Energy sources	These initiatives aim to integrate clean energy into operations, such as solar, hydroelectric, or wind power, with the objective of reducing dependence on fossil fuels and minimizing the Company's carbon footprint. These investments can generate reputational advantages, long-term savings, and access to regulatory incentives.

In this context, the evaluation of opportunities was carried out in alignment with the Company's internal risk management system, considering the benefits or positive impacts that each opportunity could have on different stakeholders, namely: business value generation (financial analysis), eco-efficiency (resource efficiency), products and services, resilience, energy sources, and the market. Table 21 outlines the criteria for evaluating climate opportunities, considering the impact of the benefits.

Table 21. Criteria for the assessment of climate-related opportunities - Impact (alignment with Canacol's CRMS)

Categories							
Consequence		Market	Eco-efficiency	Financial	Products and services	Resilience	Energy source
3	High	Attracting and attracting interest from new investors. New relevant clients and markets, as well as new contracts. Significant positive impact on share price. Positive impact on operating costs due to the implementation of the decarbonization plan.	Capital gain or reduction in operating costs due to high-efficiency technologies. Effective reduction of emissions in line with the decarbonization plan. High reduction of fugitive emissions. Implementation of the decarbonization plan on schedule.	Value generation: >1 MMUSD	Increased revenue from avoided costs resulting from climate change adaptation measures. Greater availability of access to capital for financing.	Increased valuation as a result of resilience planning. Diversification in the energy matrix of the operation.	Energy-sustainable projects Lower exposure to net GHG emissions and lower sensitivity to carbon pricing.
2	Moderate	Attracting and attracting interest from new investors. New relevant clients and markets, as well as new contracts.	Capital gain or reduction in operating costs due to high-efficiency technologies. Effective reduction of emissions in line with the decarbonization plan. High reduction of fugitive emissions.	Value generation: 100K USD - 1 MM USD	Improved competitive position in the energy transition and decarbonization process toward net-zero by 2050.	Reliability in the supply of goods and services for operations and the ability to adapt to diverse conditions.	Innovative technologies that reduce atmospheric GHG emissions.
1	Low	Positive impact on operating costs due to the implementation of the decarbonization plan.	Capital gain due to high-efficiency technologies. Effective reduction of emissions in line with the decarbonization plan.	Value generation: < 100K USD	Market recognition for taking climate action.	Climate change adaptation measures with proven avoided costs.	Returns on investment in technological changes for GHG emissions control.

Additionally, Table 22 reflects the scale of the opportunity level, based on the evaluation of benefits and the probability of occurrence:

Table 22. Criteria for the assessment of climate-related opportunities – Opportunity level in relation to the scales of impact and likelihood

Qualitative likelihood			It is not known to occur in the O&G industry	It has happened in the industry of O&G	It occurs in the O&G industry sporadically
Period of Time			It may happen in 10 years or more.	It can occur between 5 - 10 years	It can occur between 1-5 years
			Likelihood		
			1	2	3
Impact of benefits	High	3	3	6	9
	Moderate	2	2	4	6
	Low	1	1	2	3

Opportunity Level: i) Green – Very Good (5-9); ii) Yellow – Interesting (2-4); iii) Blue – Good (1)

Finally, table 23 presents a summary of the results from the climate change opportunity analysis for Canacol, considering those with a "very good" or "interesting" evaluation level, which are categorized as the most material or of highest relative importance for Canacol.

Table 23. Summary of opportunities associated with climate change - identified and evaluated for the categories: i) "Canacol's businesses in the natural gas value chain and its operations"; and ii) "the operation and market for LNG".

Type of opportunity	Chance	Scope of the opportunity	Main receiver	Time horizon of greater opportunity	Opportunity level
Market / Products and services	Natural gas prices will remain stable until 2050, while coal and oil prices will fall, resulting in a general decline in market share.	Canacol Business	Market	2030-2040	Very good
			Products and services	2030	Very good
Products and services	Projected increase in demand for and production of natural gas as a transition fuel in Colombia (until 2036). Considers measures of national interest related to natural gas consumption. Demand for LNG due to the increase in gasification plants in Colombia, with the opportunity for competitive pricing and less volatility compared to international LNG prices. Accelerated conversion of natural gas reforming plants (CCS technology) for gray hydrogen production, primarily in local refineries (2040).	Canacol Business / LNG Production	Market	2030-2040	Very good
			Products and services	2030	Very good

Type of opportunity	Chance	Scope of the opportunity	Main receiver	Time horizon of greater opportunity	Opportunity level
Eco-efficiency / Resilience	Multiple technology mapping initiatives consider technologies associated with natural gas consumption to leverage the achievement of short-term reduction goals; for example, market penetration in the freight transportation segment (converting 52,000 vehicles by 2052).	Canacol Business / LNG Production	Market	2030-2050	Very good
			Products and services	2030	Very good
Eco-efficiency / Resilience	Increased energy efficiency, self-generation of electricity, forced reduction of fugitive emissions, and reduced exposure to climate threats through effective adaptation measures.	Canacol Business / LNG Production	Market	2030-2050	Very good
		Canacol Business	Eco-efficiency	2030	Very good
Eco-efficiency / Energy sources	Full implementation of Canacol Energy's decarbonization plan.	Canacol Business	Energy sources	2030-2050	Very good
			Eco-efficiency	2030-2050	Very good
Market	The worsening of climate phenomena such as El Niño in Colombia is forcing the activation of thermal power plants and, consequently, increasing the demand for natural gas to ensure the reliability of the national interconnected energy system.	Canacol Business	Market	2030-2050	Very good
			Products and services	2030	Very good
			Energy sources	2030	Very good
			Eco-efficiency	2030	Very good

The benefits associated with each opportunity, as well as the probability assigned in its evaluation, are based on arguments, projections, data, facts, and assumptions that consider the internal and external context of the Company, as well as the assertions stated in the different climate scenarios analyzed for physical and transition risks.

Management of climate-related opportunities

The internal risk management system establishes the processes for managing various business opportunities, including those related to climate. This management begins with defining the type of treatment and action plan, where applicable, for each identified potential opportunity. Subsequently, progress is monitored and measured both periodically (quarterly and annually) and cumulatively (based on the maximum deadlines defined for the implementation or development of each opportunity) (Figure 12, steps 3 and 4, respectively). For treatment, the Company relies on the following definitions:

- **Manageability:** This refers to the level of control that Canacol has or could have over the opportunity, which can be high, medium, or low.
- **Level of opportunity exploitation:** This assessment allows the Company to visualize and understand how much benefit the evaluated opportunity could generate, with the purpose of defining its treatment.
- **Treatment, control, and/or action plan for the opportunity:** As part of this activity, the treatments and controls are proposed and described to ensure the proper management of the identified opportunity.

Definition of treatment for the opportunity: This represents how Canacol responds to each potential opportunity, which can be:

- **Scale:** When an opportunity is beyond reach or exceeds the authority of the area/process management responsible.
- **Exploit:** When the decision is made to capture the benefit associated with the opportunity, developing the action plan to make it a reality.
- **Share:** Involves transferring the opportunity to a third party so they can share some of the benefits if it is successfully developed.
- **Improve:** Used to increase the likelihood and/or impact of an opportunity, achieved by focusing on the underlying causes.
- **Accept:** The existence of the opportunity is acknowledged, but no proactive measures are taken for its implementation. This strategy is only accepted for low-priority opportunities (i.e., those not considered potential for the Company).

Finally, regarding monitoring and measurement, Canacol relies on the following definitions:

- **Monitoring:** Involves assigning intermediate objectives and, based on them, defining follow-up dates and designating responsible individuals for managing each material opportunity for the Company. The frequency of analysis will depend on the duration of each initiative, considering its scope and context, to facilitate adequate monitoring and ensure the achievement of established objectives.
- **Execution progress / progress analysis:** This is the percentage of progress relative to the activities proposed for managing each opportunity.
- **Observations:** This is relevant information regarding the management of opportunities recorded by each responsible individual, enabling the overall traceability of the activities developed and their level of success.
- **Status:** This is the description of the status of the opportunity in terms of “open (improved or shared)” or “closed (exploited or not exploited).” This outcome impacts on the strategic indicator related to the evaluation of the performance of the process, area, or leader in charge.

Example of implementing the opportunity management process

Below is an example of the management measures implemented for two of the most relevant climate opportunities for Canacol, considering the following categories: **i)** Canacol's businesses in the natural gas value chain and its operations, and **ii)** the operation and market for LNG. This example also presents the progress achieved during 2024 in relation to the proposed management activities.

According to our CRMS, the "opportunity level" is calculated based on the highest rating according to the benefit criteria analyzed, including the financial impact. For opportunities 1 and 2 in this example, the most relevant criteria are "Market and Products and Services" and "Market, Products and Services, Energy Sources, and Ecoefficiency," respectively (see table 24).

Table 24. Summary matrix of climate-related opportunity management

Transition risk	Type Opportunity	Category	Time horizon	Opportunity level	Financial impact (USD)	Management strategy	Proposed management measures	Progress 2024
1. Multiple technology mapping initiatives consider technologies associated with natural gas consumption to leverage the achievement of short-term reduction goals; for example, market penetration in the freight transportation segment (converting 52,000 vehicles by 2052).	Eco-efficiency / Resilience	Canacol's businesses in the natural gas value chain and its operations / Operations and the market for LNG	2030 and 2050	Very Good	**Qualitative analysis (Moderate):** Although there is no future market information on natural gas-based technologies and applications for the industrial and transportation sectors, there are known market growth projections, specifically in relation to national targets for the transportation sector related to the number of natural gas-powered vehicles.	Improve	**1.**Define a **specialized surveillance and intelligence cell** that is transversal to the business, or failing that,**of a similar mechanism**, which enables the systematization and implementation of data and information analytics, allowing for the identification of early warnings about the natural gas and LNG technology market; as well as the definition of action plans that are part of and strengthen the business strategy (financial and operational).	• **Implementation of advanced analytics:** Progress was made in the development of a data analytics system that allows market information to be processed in real time, identifying emerging trends and potential risks. • **Early Warnings:** Monitoring parameters were established to detect changes in the competitive environment, new regulations or technological innovations that could impact the natural gas and LNG business.
2. The worsening of climate phenomena such as El Niño in Colombia is forcing the activation of thermal power plants and, consequently, increasing the demand for natural gas to ensure the reliability of the national interconnected energy system.	Market	Canacol's businesses in the natural gas value chain and its operations	2030 and 2050	Very Good	**Qualitative analysis (Moderate):** In 2021, natural gas accounted for 10% of national energy production, 22% of total energy supply, and 16% of electricity generation. The information consulted for this analysis indicates that: i) no increase in installed capacity for electricity generation from conventional thermal sources in the national grid is planned; and ii) the proportion of electricity generation from thermal sources is not expected to remain the same. However, reliability charge schemes for essential public services prevail over electricity generation, suggesting that the need to diversify the national energy mix will still preserve thermal generation, but with	Improve	**1.**Maintain the business's commercial strategy updated according to the trends, demands, and needs of the environment, ensuring the preservation, improvement, and creation of strong commercial relationships, as well as effective distribution channels for the supply of natural gas and regasification (in the case of LNG) from the country's thermal power plants**.**	• In 2024, Canacol Energy made significant progress toward its goal of keeping its commercial strategy aligned with the trends, demands, and needs of the environment, ensuring the strengthening of strategic business relationships and optimizing natural gas and LNG distribution channels. • **Strategic Update:** The commercial strategy was reviewed and adjusted to respond to changes in the energy market, incorporating new supply and demand dynamics for natural gas and LNG. • ESG criteria were integrated into the commercial strategy, aligning operations with investor and customer expectations regarding sustainability and decarbonization.

Transition risk	Type Opportunity	Category	Time horizon	Opportunity level	Financial impact (USD)	Management strategy	Proposed management measures	Progress 2024
					increasingly less relevance and a greater share of non-conventional renewable sources.			• **Strengthening Commercial Relations:** • **-** Strategic agreements were consolidated with key players in the energy sector, ensuring a continuous long-term supply of natural gas. • -New distribution channels were developed to expand geographic coverage and optimize LNG transportation logistics. • **Development of New Distribution Channels:** • -Partnerships with logistics operators were implemented to increase efficiency in LNG delivery to emerging markets. • -Opportunities were explored to diversify distribution routes, reducing risks associated with weather events and demand variability.

6 Climate change strategy

6.1. Disclosure scope in relation to the TCFD framework recommendations

Strategy

This report discloses Canacol's action against recommendations a, b and c of the "Strategy" element of the TCFD framework:

Describe the climate-related risks and opportunities the organization has identified over the short, medium and long term.
Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning.
Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including 2 C° or lower scenario.

6.2. Strategy details

In Chapter 5, an overview of Canacol's integrated climate change risk and opportunity management system was provided, covering everything from their identification and evaluation to monitoring and measurement. This disclosure presented the methodological details for managing both present and future climate events, including both physical and transitional risks.

In general, the description included: i) the climate change scenarios and time horizons considered; ii) the methodology for identifying and evaluating the opportunities and climate risks that could arise in each analyzed time horizon; iii) the process used to determine which risks and opportunities could have a material impact on the Company, including the analysis and quantification of financial impacts; and iv) the methodology for managing high-relative-importance risks and opportunities for Canacol.

Below is a summary of the main parameters considered for the analysis of physical and transitional risks, as well as climate-related opportunities:

Table 26. Key parameters considered in the physical climate risk management process

Prioritized assets and their geographic location (Lat= latitude; Lon= longitude; and Alt=Altitude)	Climate threats considered	Climate scenarios considered	Time horizons analyzed	Receptors - Impact Scale (1-5, where 1 = none and 5 = very high)	Likelihood scale	Risk level (Impact X Probability)	Treatment	Monitoring and measurement (Short, medium and long term)
Jobo & LNG - Lat: 8,641, Lon: -75,387, Alt: 83 amsl (Sahagún, Córdoba) **Betania - Lat:** 8,559, Lon: -75,371, Alt: 89 amsl (New Town, Córdoba) **Clarinete - Lat:** 8,729, Lon: -75,323, Alt: 63 meters above sea level (San Marcos, Sucre) **Pandereta - Lat:** 8,758, Lon: -75,238, Alt: 53 amsl (Caimito, Sucre) **Níspero - Lat:** 8,614, Lon: -75,240, Alt: 35 meters above sea level (San Marcos, Sucre)	i) Extreme heat ii) Frost or extreme cold iii) Water Stress and Drought iv) River Floods v) Forest fires vi) Landslides due to precipitation	**Sixth Assessment of the Intergovernmental Panel on Climate Change - IPCC6:** i) SSP1-2.6 (optimistic) ii) SSP3-7.0 (neutral) iii)SSP5-8.5 (pessimistic)	i) baseline: 1990 – 2022 ii) short term: until 2030 iii) medium term: until 2040 iv) long term: until 2050	i)People (P) ii) Asset (A) / Operation (O) iii) Environmental (E) iv) Financial (F) v) Privilege to operate / Reputation (R) vi) Legal and Compliance (LC)	1 - Occurrence in industry is not known (may occur in 10 years or more). 2 - Has occurred in the O&G industry (May occur within 5-10 years). 3 - Occurs in the industry sporadically (may occur within 3-5 years). 4 - Likely to occur in operation (may occur within 1-3 years). 5 - Commonly occurring in the O&G industry (may occur within the next year).	I) Very high (20-25) ii) High (10-19) iii) Medium (4-9) iv) Low (1-3) NOTE: For analytical purposes, significant risks correspond to those whose assessment yields a risk level greater than 4.	• **Escalate:** when the authority of process management is exceeded. • **Avoid:** when it is decided to eliminate the threat in order to protect the process or project under analysis. • **Transfer:** is the change of ownership of a threat to an expert third party to manage the risk. •**Mitigate:** measures are taken to reduce the probability of occurrence or the impact of a threat. •**Accept:** The existence of a threat is recognized, but proactive measures are not necessary.	• **Follow-up:** assignment of follow-up dates and those responsible for managing each material risk of the Company. • **Progress Analysis:**based on the percentage of progress of the proposed risk management activities. • **State:** current risk status in terms of "open (latent, transferred or accepted)" or "closed (unrealized, controlled materialized and uncontrolled materialized)".

Table 27. Key parameters considered in the transition climate risk management process

Identification					Assessment			Management	
Scope of analysis	Typology of transition risks considered	Analysis categories	Climate scenarios considered	Time horizons analyzed	Receptors - Impact Scale (1-5, where 1 = none and 5 = very high	Probability scale	Risk level (Impact X Probability)	Treatment	Monitoring and measurement (Short, medium and long term)
Corporate Canacol operations in Colombia **Internal context** Comprehensive analysis of the current state of the company, with an emphasis on climate change management. **External context** Analysis of data and information from external sources relevant to the sector, with an emphasis on EIA transition scenarios.	i) Political and legal ii) Technological iii) Market iv) Reputational	i) Canacol's businesses in the natural gas value chain and its operations. ii) the operation and the market for LNG.	**1. IEA Transition Scenarios:** -Net Zero Emissions Scenario for 2050 (NZE2050) -Announced Commitments Scenario (APS) -Stated Policies Scenario (STEPS) **2. Scenarios of the Plan Energético Nacional de Colombia 2022-2052:** **-Updating:** maintains current trends. **-Modernization:** introduces technological and efficiency improvements. **-Inflection**: It marks a turning point towards a more decisive energy transition, with more active policies. **-Innovation:** promotes the adoption of emerging technologies and innovative business models in the energy sector. **-Energy Transition:** It proposes a profound transformation of the energy system, with a high penetration of renewable energies.	**i) baseline:** 1990 – 2022 **ii) short term:** until 2030 **iii) medium term:** until 2040 **iv) long term:** until 2050	I)Financial (F) ii) Privilege to operate / Reputation (R) iii) Political and legal aspects iv) Technological aspects v) Market.	1 - Occurrence in industry is not known (may occur in 10 years or more). 2 - Has occurred in the O&G industry (May occur within 5-10 years). 3 - Occurs in the industry sporadically (may occur within 3-5 years). 4 - Likely to occur in operation (may occur within 1-3 years). 5 - Commonly occurring in the O&G industry (may occur within the next year).	**I) Very high** (20-25) **ii) High** (10-19) **iii) Medium** (4-9) **iv) Low** (1-3) **NOTE:** For analytical purposes, significant risks correspond to those whose assessment yields a risk level greater than 4.	• **Escalate:** when the authority of process management is exceeded. • **Avoid:** when it is decided to eliminate the threat in order to protect the process or project under analysis. • **Transfer:** is the change of ownership of a threat to an expert third party to manage the risk. •**Mitigate:** measures are taken to reduce the probability of occurrence or the impact of a threat. •**Accept:** The existence of a threat is recognized, but proactive measures are not necessary.	• **Follow-up:** assignment of follow-up dates and those responsible for managing each material risk of the Company. • **Progress Analysis:**based on the percentage of progress of the proposed risk management activities. • **State:** current risk status in terms of "open (latent, transferred or accepted)" or "closed (unrealized, controlled materialized and uncontrolled materialized)".

Table 28. Key parameters considered in the climate-related opportunities management process

Identification					Assessment			Management	
Scope of analysis	**Typology of opportunities**	**Analysis categories**	**Climate scenarios considered**	**Time horizons analyzed**	**Receptors - Impact Scale** (1-3, where 1=Low and 3=High)	**Probability scale**	**Opportunity Level (Impact X Probability)**	**Treatment**	**Monitoring and measurement** (Short, medium and long term)
Corporate Canacol operations in Colombia **Internal context** Comprehensive analysis of the current state of the company, with an emphasis on climate change management. **External context** Analysis of data and information from external sources relevant to the sector, with an emphasis on EIA transition scenarios.	i) Market ii) Products and services iii) Eco-efficiency (efficiency of natural and energy resources) iv) Resilience v) Energy sources	i) Canacol's businesses in the natural gas value chain and its operations. ii) the operation and the market for LNG.	**1. Scenarios from the Sixth Assessment of the Intergovernmental Panel on Climate Change - IPCC6:** SSP1-2.6, SSP3-7.0, and SSP5-8.5. **2. IEA Transition Scenarios:** NZE2050, APS, and STEPS. **3. Scenarios of the National Energy Plan of Colombia 2022-2052:** Updating, Modernizing, Inflection, Innovation, and Energy Transition.	**i) baseline:** 2022 **ii) short term:** until 2030 **iii) medium term:** until 2040 **iv) long term:** until 2050	i)Financial (F) ii) Privilege to operate / Reputation® iii) Eco-efficiency iv) Products and services v) Resilience vi) Market vii) Source of energy	**1 - The occurrence in the industry is not known** (can occur in 10 years or more). **2 - It has happened in the O&G industry** (It can occur between 5 - 10 years. **3 - It occurs sporadically in the industry** and (can occur between 1 - 5 years.	**i) Very good** (5-9) **ii) Interesting** (2-4) **iii) Good** (1) **NOTE:** For analytical purposes, significant risks correspond to those whose assessment yields a risk level greater than 4.	• **Escalate:** when the authority of process management is exceeded. • **Avoid:** when it is decided to eliminate the threat in order to protect the process or project under analysis. • **Transfer:** is the change of ownership of a threat to an expert third party to manage the risk. •**Mitigate:** measures are taken to reduce the probability of occurrence or the impact of a threat. •**Accept:** The existence of a threat is recognized, but proactive measures are not necessary.	• **Follow-up:** assignment of follow-up dates and those responsible for managing each material risk of the Company. • **Progress Analysis:** based on the percentage of progress of the proposed risk management activities. • **State:** current risk status in terms of "open (latent, transferred or accepted)" or "closed (unrealized, controlled materialized and uncontrolled materialized)".

6.2.1. Description of material risks and opportunities for the company

Based on the parameters established in tables 26, 27, and 28 for managing climate events, the information will be further elaborated on regarding: i) the description of the impact of climate risks and opportunities on Canacol and its business strategy, and ii) the evaluation of strategic resilience (both financial and operational), considering the different climate scenarios analyzed and the vulnerability assessment conducted.

Description of physical risks and their derived financial impacts

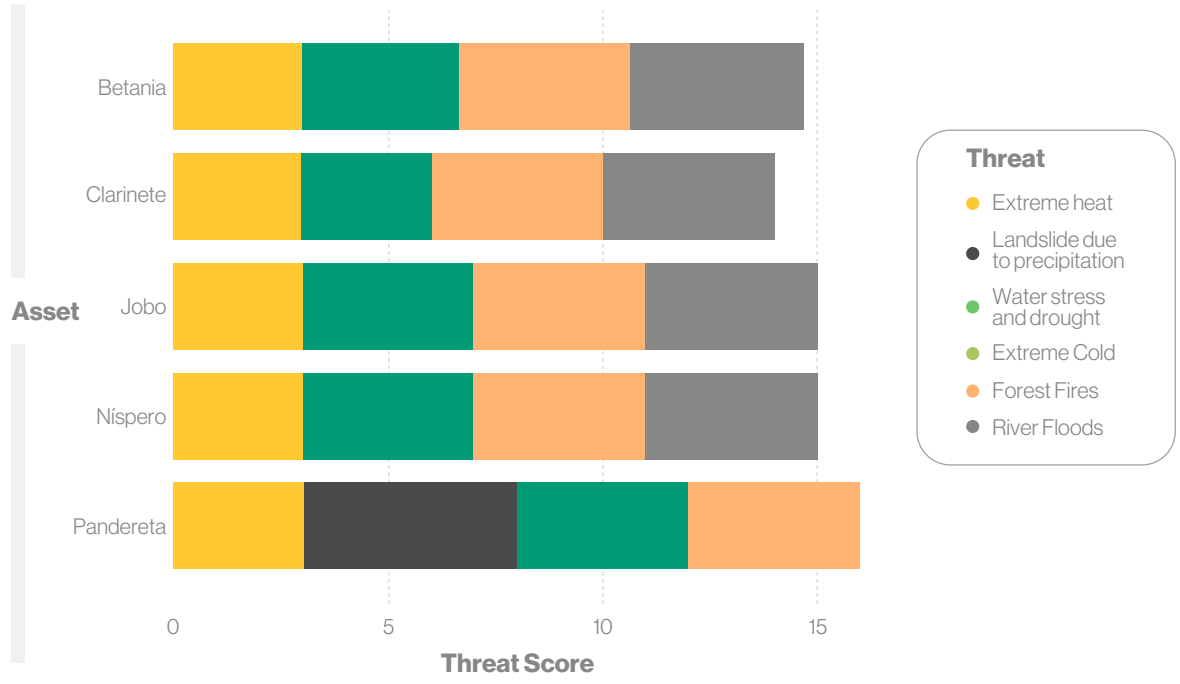
The general methodology for the identification, assessment, and management of physical risks is detailed in figure 10. The primary objective of the risk analysis conducted by Canacol was to identify, for each of the prioritized assets, its exposure to one or more climate-related threats, as well as to gather relevant information on the magnitude of each exposure. The results of this analysis were based not only on physical climate change data and its projections but also on the specific characteristics of each of the evaluated assets. The fundamental premises of this study are presented below.

The facilities prioritized for physical risk analysis are those of the highest strategic importance to the Company (table 26). These assets are designed to process and treat natural gas through various stages: i) primary separation, ii) dehydration, iii) hydrocarbon dew point conditioning, iv) compression, v) filtration, and vi) measurement.

Canacol selected a total of six climate threats (table 26) to evaluate their impact on each of the prioritized assets, choosing those most relevant to the Company. In addition to climate threats, factors such as land cover, geomorphology, and slopes in the areas where the assets are located were considered[10].

The time horizons for the physical risk analysis (Table 26) were selected in alignment with the climate strategy (decarbonization plan) and the business strategy, also considering global time horizons and goals such as the Paris Agreement and the 2030 Agenda for Sustainable Development. Regarding points 1 through 4, Figures 13, 14, 15, and 16 present the average result of the exposure levels of Canacol's assets to natural threats, considering the baseline analysis (2022) and the selected time horizons.

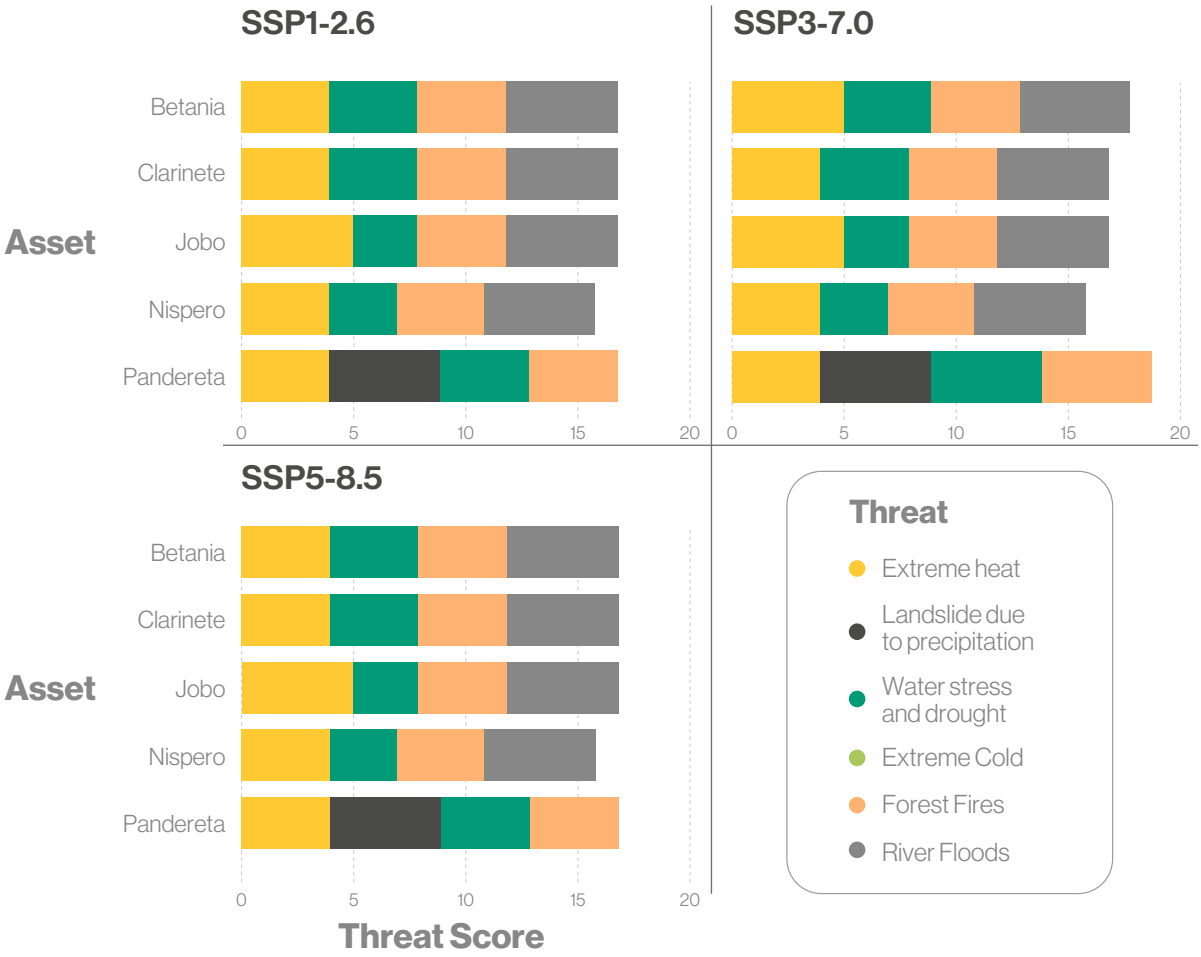
Figure 13. Graphical analysis of asset exposure level to natural threats – baseline.



10 Land Cover: As an initial step, the predominant land cover within a 200-meter buffer was identified, followed by presenting the land cover at the exact site of the establishment. This information was relevant for determining susceptibility to forest fires. Geomorphology and Slopes: The terrain forms and their slope percentages are presented. This information was relevant for identifying susceptibility to flooding and mass movements.

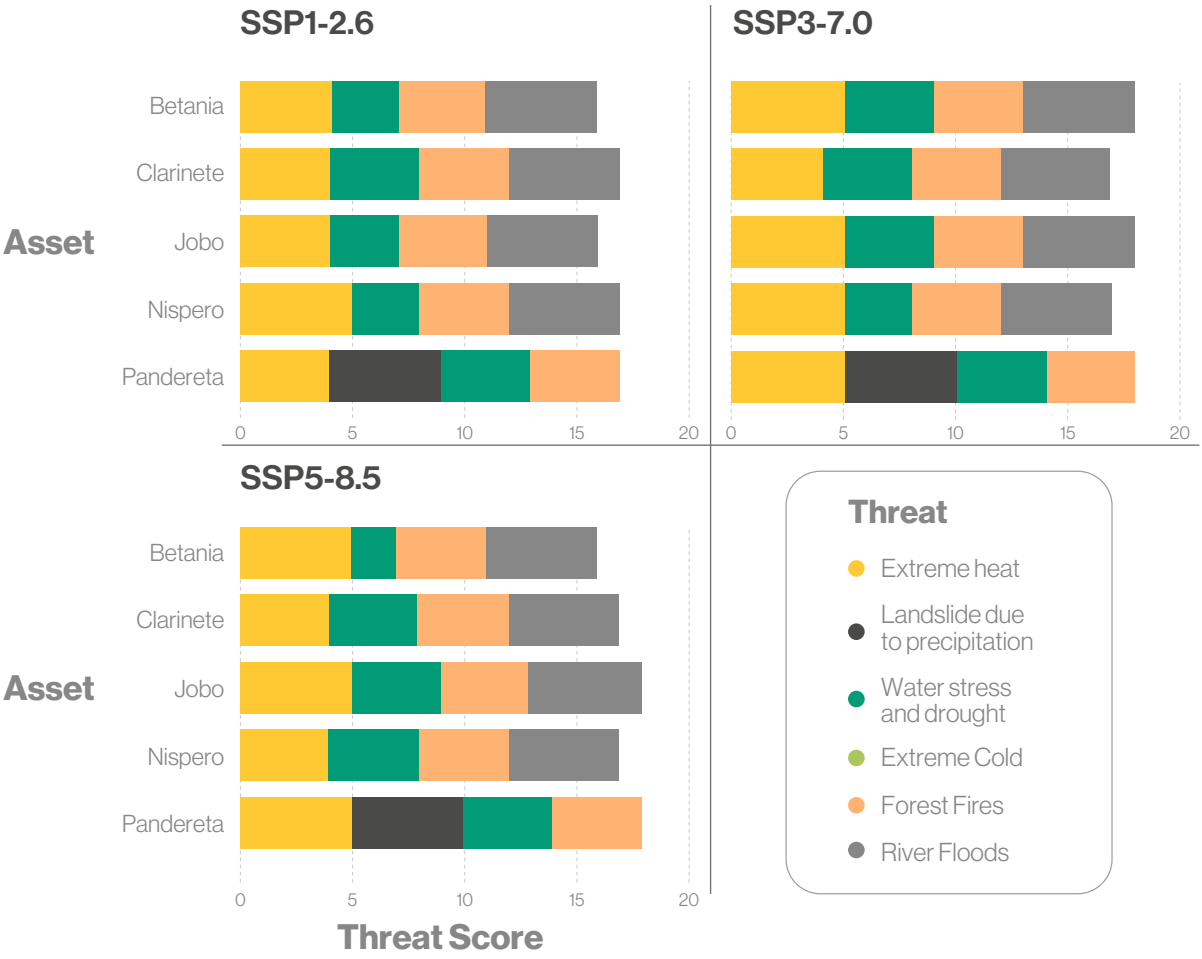
From the graph, it can be identified that the assets with the highest accumulated exposure level to climate threats are Pandereta, followed by Jobo and Níspero, then Betania, and the one with the lowest exposure level is Clarinete.

Figure 14. Graphical analysis of asset exposure level to natural threats for the 2022-2030 time horizon.



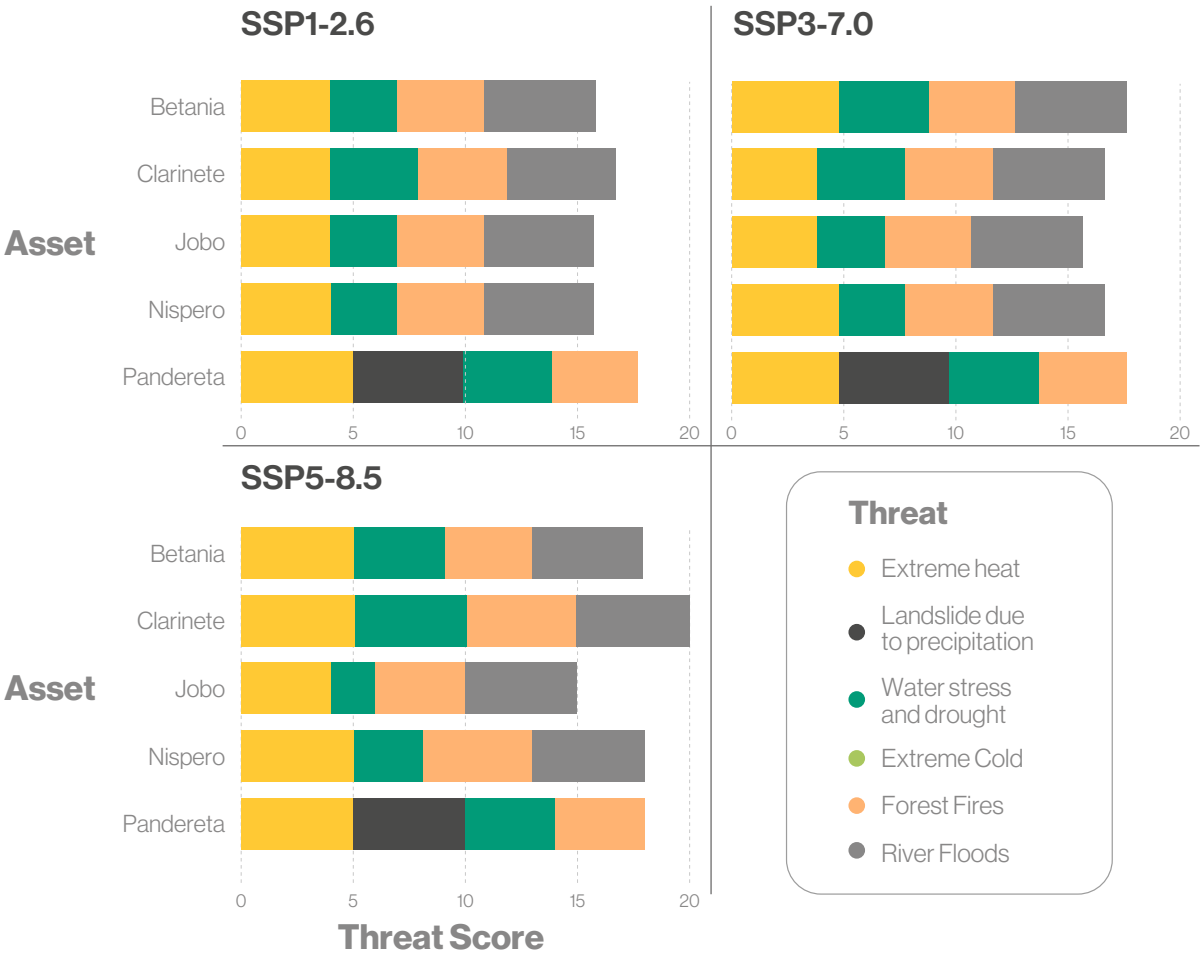
Regarding the SSP1-2.6 and SSP5-8.5 scenarios, the asset with the highest exposure level to climate threats is Pandereta, followed by Betania, Clarinete, and Jobo, with similar conditions for the latter three. In the SSP3-7.0 scenario, exposure to extreme heat increases for Betania, and ultimately, Pandereta remains the asset with the highest exposure level.

Figure 15. Graphical analysis of asset exposure level to natural threats for the 2030-2040 time horizon.



It is evident that the exposure level to climate threats increases across all assets and in all climate scenarios. This increase is primarily attributed to changes in the magnitude of the extreme heat threat. The most significant changes in this threat are recorded for the SSP3-7.0 and SSP5-8.5 scenarios. In the SSP1-2.6 scenario for 2040, it is evident that the Níspero asset would experience an increase in exposure to the extreme heat threat compared to the baseline, while the Clarinete asset shows an increase in exposure to water stress or drought compared to the baseline.

Figure 16. Graphical analysis of asset exposure level to natural threats for the 2040-2050 time horizon.

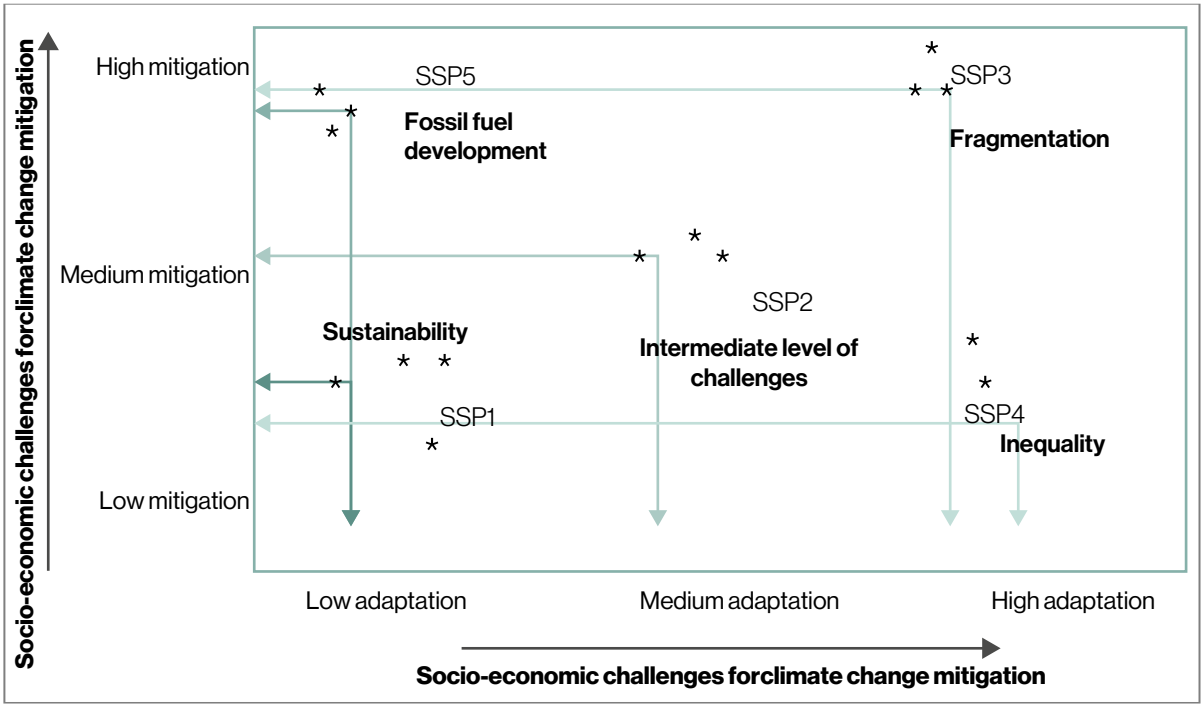


According to the information presented, for the SSP1-2.6 scenario, the asset with the highest accumulated exposure level to climate threats is Pandereta. In the SSP3-7.0 scenario, the assets with the highest accumulated exposure levels are Pandereta and Betania, while in the SSP5-8.5 scenario, it is Clarinete. During this period (2040-2050), it is identified that, in all climate scenarios, the threats with the greatest variations are extreme heat and water stress, particularly in the projections of the SSP5-8.5 scenario. These variations have implications for the exposure level of all the assets considered in the analysis.

Based on the information gathered about the expected climate threats, the identification and assessment of present (baseline) and future physical risks for Canacol were carried out, using as a basis, as explained, three of the most recent IPCC climate scenarios (SSP1-2.6, SSP3-7.0, and SSP5-8.5), which are widely accepted and applied by the international scientific community.

Specifically, the scenarios known as Shared Socioeconomic Pathways (SSP) were selected. These projections are derived from the application of the Integrated Assessment Model (IAM), which is used to describe plausible but uncertain future changes in human development, the economy, and the environment.

Figure 17. Shared socioeconomic pathways (SSP) scenarios



Source: Ruiz-García, P., Monterroso-Rivas, A.I., Sánchez-Torres G., Vargas-Castilleja, R.C., Báez-Vásquez, J. & Conde-Álvarez, A.C (2022). Brief Guide for the Selection, Download, and Application of Climate Change Scenarios for Mexico. According to the latest IPCC scenarios. UACh-UNAM-BUAP-UAT-ISF-Mexico, A.C. 98 p. (DOI:10.13140/RG.2.2.20064.15369).

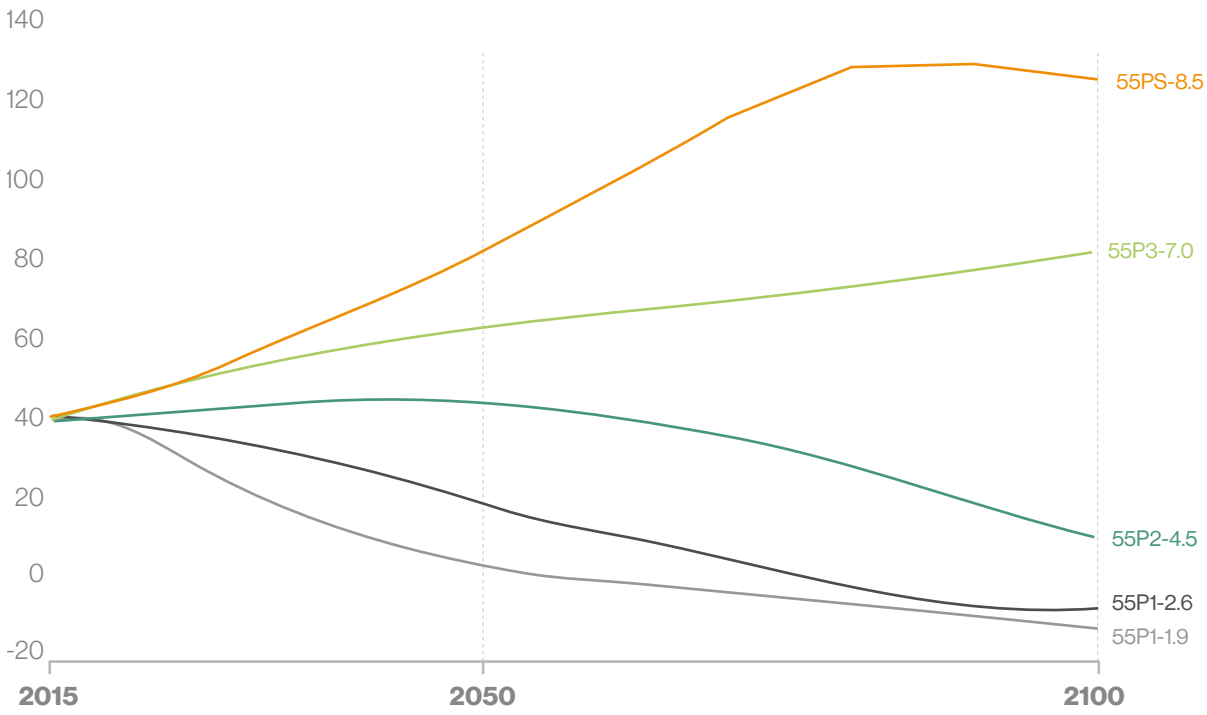
The names of these scenarios are accompanied by a number from 1 to 5, which describes the underlying socioeconomic trends, and a decimal number that reflects the approximate level of radiative forcing (W/m²) projected for the year 2100. This is established considering that, before the construction of the SSP scenarios, the scientific community used "Representative Concentration Pathways" (RCPs), which had certain uncertainties and inherent limitations. These RCP scenarios have an equivalence with the SSP scenarios, as shown below:

Table 29. Equivalence between the climate scenarios SSP and RCP used by Canacol

RCP	SSP	SSP x-y
RCP 2.6 – Ambitious scenario with significant reductions in GHG emissions. Compatible with the Paris Agreement (1.5°C target).	**SSP1**- Sustainability: rapid transition to a low-carbon economy, strong environmental policies, and high international cooperation.	**SSP1-2.6** (optimistic)
RCP 7. RCP 7.0 – Scenario with high emissions, resulting in an average global temperature increase of 3°C.	**SSP3**- Fragmentation: regional rivalry, low international cooperation, high emissions, and growing inequality.	**SSP3-7.0** (Neutral)
RCP 8.5 – High emissions scenario, with little to no control. Represents a future with no significant mitigation, leading to an average global temperature increase of 4.5°C or more.	**SSP5**- Fossil-fueled Development: economic expansion driven by fossil fuels	**SSP5-8.5** (Pessimist)

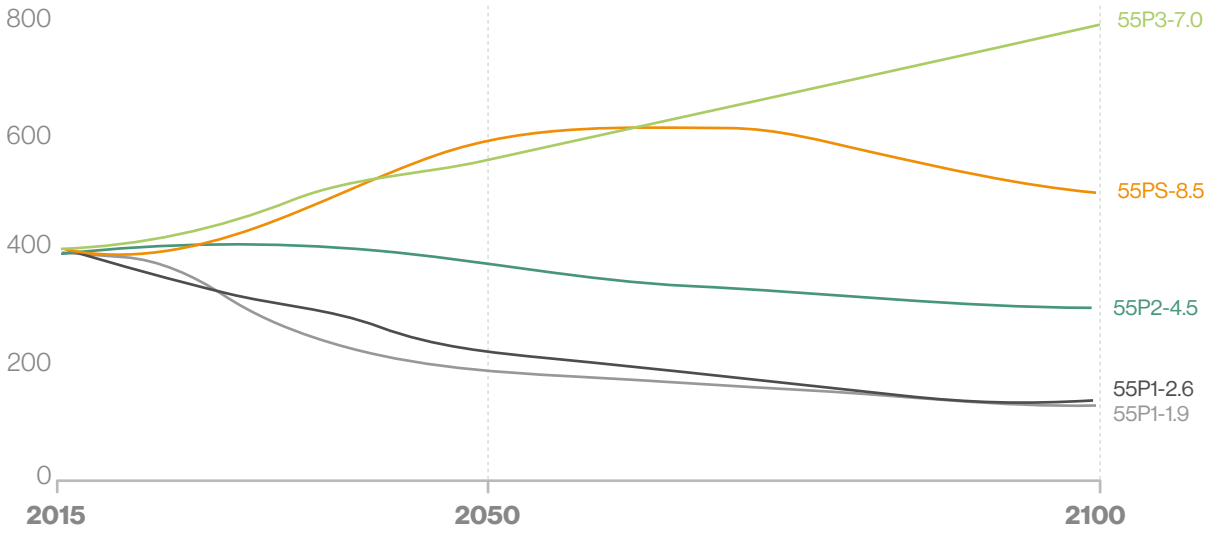
Thus, the projections of carbon dioxide (CO2) and methane (CH4) emissions, classified as two of the most relevant greenhouse gases for Canacol's operations, show the following trends (figures 18 and 19):

Figure 18. Evolution of carbon dioxide emissions for each SSP scenario (GtCO2/year)



Source: Annual CO2 emissions in the Shared Socioeconomic Pathways (SSP). Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (p. 16), by the IPCC (2021).

Figure 19. Evolution of anthropogenic methane emissions for each SSP scenario (MtCH4/year)

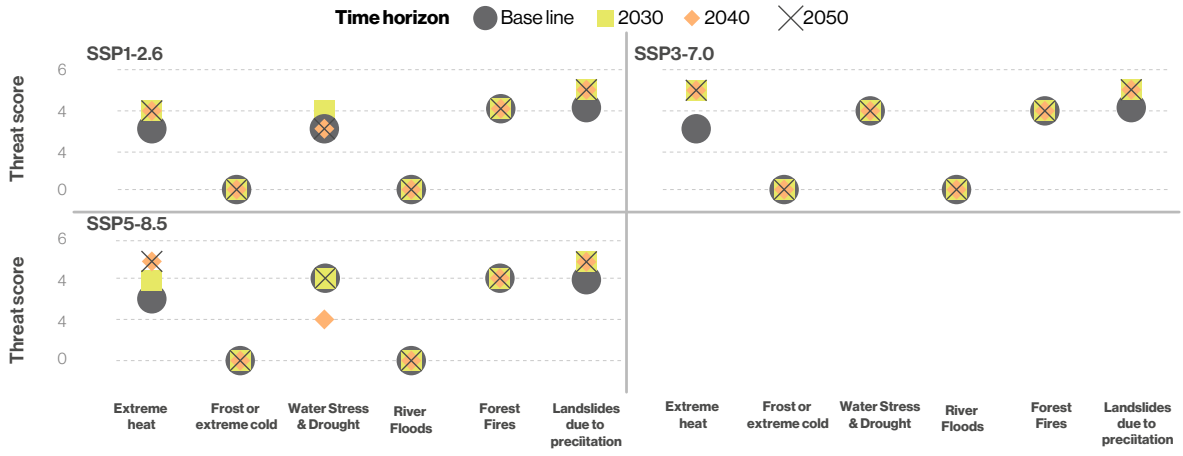


Source: Annual CH4 emissions in the Shared Socioeconomic Pathways (SSP). Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (p. 16), by the IPCC (2021).

The assessment of physical risks included an analysis of the vulnerability of each asset to climate threats, considering the projections from each climate scenario. This analysis reflects the degree to which each asset could be affected by the risks associated with climate change, derived from its exposure to such threats over time, and its ability to withstand extreme climate events. In this regard, vulnerability is a study that enabled Canacol to identify risks and define the necessary control and management measures to enhance the company's responsiveness, promoting adaptation and resilience.

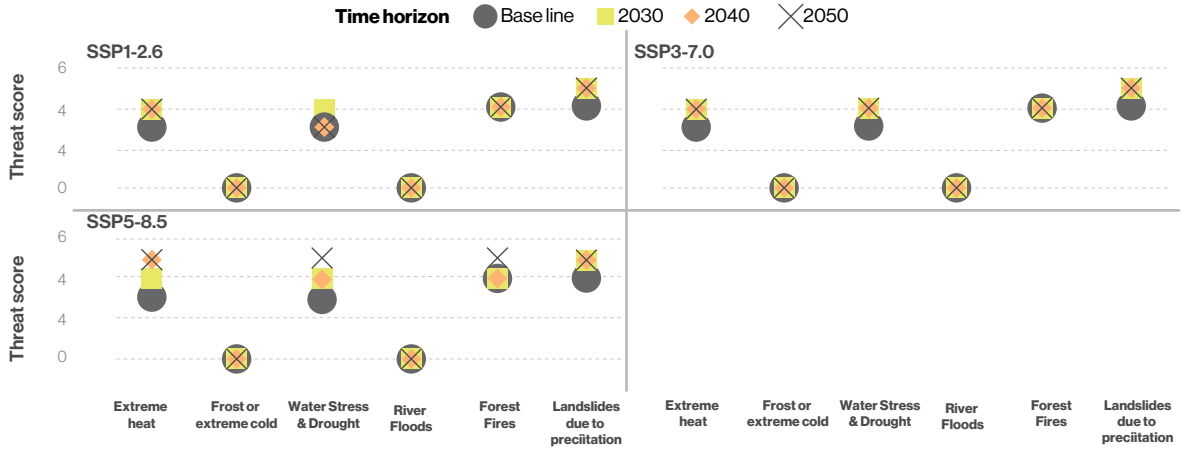
Below, the results of the vulnerability analysis for each asset are presented. Figures 20 to 24 should be interpreted by columns, which allow visualization of the severity of each climate threat in relation to each scenario and time horizon.

Figure 20. Comparative vulnerability of Betania to climate threats for each climate scenario and time horizon



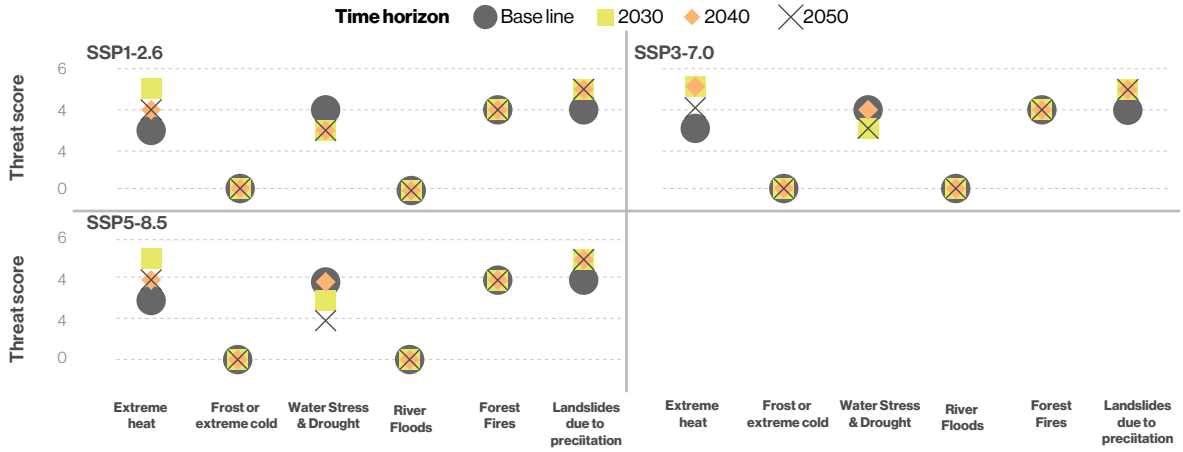
The results of this analysis show that the Betania asset presents higher vulnerability to extreme heat, particularly in the SSP3-7.0 scenario. Additionally, this asset demonstrates that in all climate scenarios, its exposure to rainfall flooding remains consistent over time from 2030 to 2050, making it the second most relevant vulnerability for this location.

Figure 21. Comparative vulnerability of Clarinete to climate threats for each climate scenario



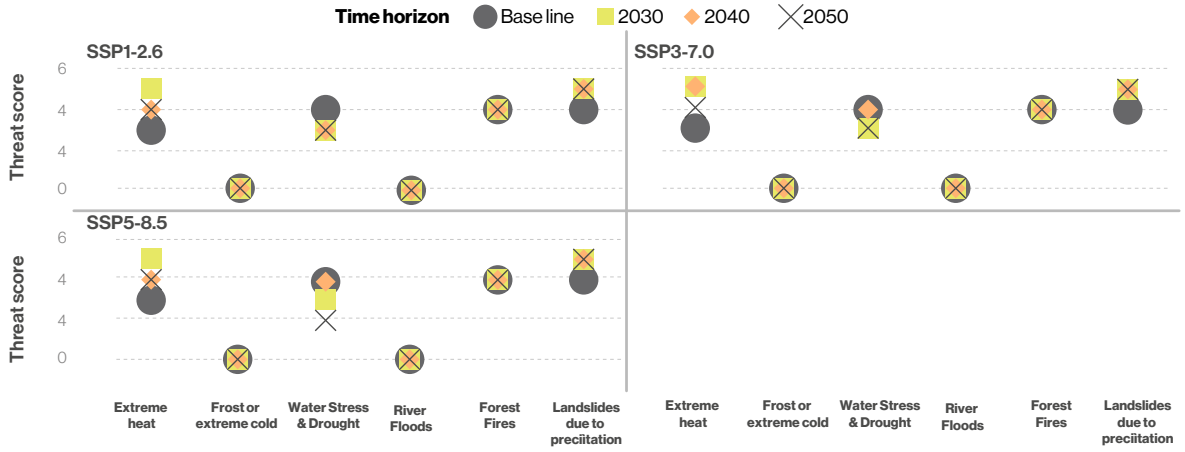
It is identified that Clarinete's greatest vulnerability is due to its level of exposure to river flooding, which is common across all climate scenarios from 2030 to 2050. Other relevant vulnerabilities arise from the increasing exposure to water stress and extreme heat threats between 2030 and 2050.

Figure 22. Comparative vulnerability of Jobo to climate threats for each climate scenario



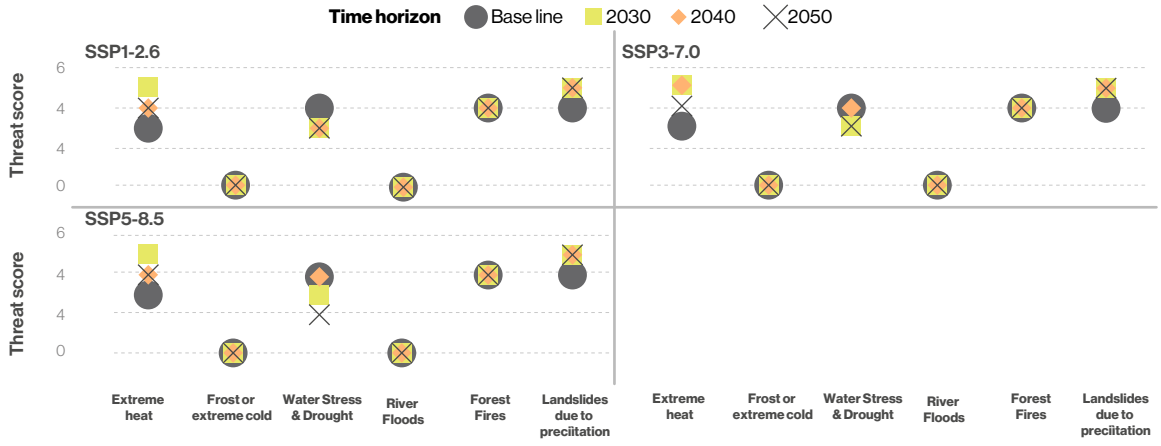
It is identified that the greatest vulnerability for this asset is associated with its level of exposure to the climate threat of river flooding (2030 to 2050), followed by extreme heat (2030 – 2040). On the other hand, like the Clarinete plant, it is identified that in the SSP5-8.5 scenario, by 2050, the vulnerability to exposure to extreme heat is reduced.

Figure 23. Comparative vulnerability of Níspero to climate threats for each climate scenario



As a result of the analysis presented, it is identified that the greatest vulnerabilities for the asset are associated with its level of exposure to extreme heat, which reaches its maximum value during the year 2030 in the SSP1-2.6 scenario, and during 2030–2040 in the SSP3-7.0 and SSP5-8.5 scenarios. Similarly, it is identified that there is a significant vulnerability related to exposure to river flooding, with an increase in exposure to this climate threat from 2030 to 2050.

Figure 24. Comparative vulnerability of Pandereta to climate threats for each climate scenario



The main vulnerabilities identified for this asset are associated with exposure to river flooding and extreme heat threats. The first shows that, starting from 2030, the vulnerability could be higher compared to the baseline, and the second shows that in 2030, the maximum vulnerability is reached. By 2040 and 2050, although the vulnerability to extreme heat remains present at this location, it decreases compared to 2030.

Continuing with the example mentioned in Chapter 5 for Betania and considering the fundamental premises previously described, below are the material physical climate risks identified, derived from the heatwave (extreme) threat. Additionally, the impacts these risks could generate for the business and operation of this asset are described.

Table 30. Description of material physical risks and their derived financial impacts for the Betania asset

Climate threat / event:	No.	Identified risk (Risk description)	Primary receptor – material risk criterion	Description of the impact that results in financial consequences	Climate scenario	Time horizon analyzed	Risk level
Heat waves / Extreme heat	1.	Impact on the health of the workforce, especially those working outdoors and in confined spaces due to exposure to high temperatures.	People	According to the results of the analysis, in the most favorable climate scenario**(SSP1-2.6)**, It is projected that between the years **2030 and 2040**, heat wave events lasting between **19 and 24 continuous days** could generate, as a probable effect, the **incapacity of at least one person for a period of less than 15 days**, due to extreme heat-related illnesses such as **Heat stroke, severe dehydration, hyponatremia, or loss of consciousness due to hyperthermia**, even under resting conditions. In contrast, under the most adverse scenario**(SSP5-8.5)**, between **2040 and 2050**, prolonged exposure to high temperatures is expected for periods of **26 to 55 consecutive days** In the absence of control measures, this level of exposure could lead to **prolonged disabilities of up to 180 days for one person, or several cases of disabilities of less than 15 days** associated with severe symptoms linked to extreme heat. **Variables analyzed for the financial impact analysis:** *Number of heat wave events projected during the period *Daily cost in USD of interruption of operations *Maximum duration of the event in days during the period	SSP1- 2.6	2030-2040-2050	Medium
					SSP3-7.0	2030	High
						2040-2050	Medium
					SSP5- 8.5	2030-2040-2050	Medium
	2.	Impact on equipment and its integrity, as well as on gas treatment processes due to exposure to extreme heat.	Assets / operations	No relevant risks to the integrity of critical equipment, control instruments or flow lines associated with an increase in ambient temperature are anticipated, since it was identified that. **Some design specifications contemplate efficient operation even at temperatures above 30.4°C.** Additionally, a possible increase in temperature could **facilitate certain operational processes, such as pumping and transporting gas** through the pipelines. However, we will deepen our technical analysis of the combined effects of high temperatures and increased humidity, especially on gas treatment processes. According to the results obtained under the three climate scenarios analyzed**(SSP1-2.6, SSP3-7.0 and SSP5-8.5)**for the period 2030–2050, the projected conditions of greater intensity and frequency of heat waves (especially under **SSP5-8.5 towards 2040 and 2050**) could generate **one-off events of unavailability of equipment or systems for a period of ≤72 hours**, temporarily affecting the operation and requiring **adjustments to preventive maintenance routines and plans. Variables analyzed for the financial impact analysis: *Number of heat wave events projected during the period *Cost of partial process interruption and repairs for a period less than or equal to 72 hours.**	SSP1- 2.6	2030-2040-2050	Medium
					SSP3-7.0	2030-2040-2050	Medium
					SSP5- 8.5	2030-2040-2050	Medium

The management measures for these risks, as well as the financial quantification of the impacts derived and the progress made in 2024, can be found in Chapter 5, specifically in table 14.

The management measures for risk number 1 in table 30 include the development, update, and implementation of an occupational health prevention plan that includes measures such as thermal monitoring, hydration protocols, active breaks, and first aid training to treat heatstroke. Additionally, it is expected that environmental sensors and early warning systems will be incorporated in critical areas to anticipate extreme heat events, aiming to reduce the risk of health impacts on operational personnel.

On the other hand, the management measures for risk number 2 in table 30 are focused on strengthening preventive and predictive maintenance programs by integrating projected climate variables, particularly those related to extreme heat and humidity. Additional simulations on the performance of systems under adverse climatic conditions are also considered, along with the inclusion of these scenarios in operational continuity plans and asset management.

Description of transition risks and their derived financial impacts

The general methodology for identifying, assessing, and managing transition risks is detailed in figure 11. The main objective of this analysis was to identify, from a corporate perspective, Canacol's exposure to political, legal, technological, and market factors to understand the potential implications for its ability to adapt to the changes arising from the transition to a low-carbon economy. Below are the fundamental premises of this study:

The identification of transition risks began with an internal diagnostic process focused on Canacol's operations and corporate management of climate change.

The transition risk analysis was enriched with information on physical risks, climate data, and their respective management.

Transition risks were identified and evaluated in two categories: i) Canacol's business in the natural gas value chain and its operations, and ii) the operation and market for LNG.

In accordance with the recommendations of the TCFD framework, Canacol considered the following risk typologies for the identification and assessment process: i) Political and Legal, ii) Technological, iii) Market, and iv) Reputational.

The reference time horizons for the analysis of transition risks (Table 27) were selected based on the climate and business strategies (financial and operational), also considering global timeframes and goals, such as the Paris Agreement and the 2030 Agenda for Sustainable Development.

As external input, the 2021 and 2022 "World Energy Outlook" reports from the International Energy Agency, the TCFD October 2023 Status Report, and the 2023 Global Risks Report from the World Economic Forum were used to analyze the international context.

Regarding the national context, the primary source was the "Update of the National Energy Plan 2022-2052," which includes the following scenarios: i) update, ii) modernization, iii) inflection, iv) innovation, and v) energy transition.

The central reference for this study was the International Energy Agency, particularly the STEPS, APS, and NZE2050 scenarios, on which the risk analysis was based.

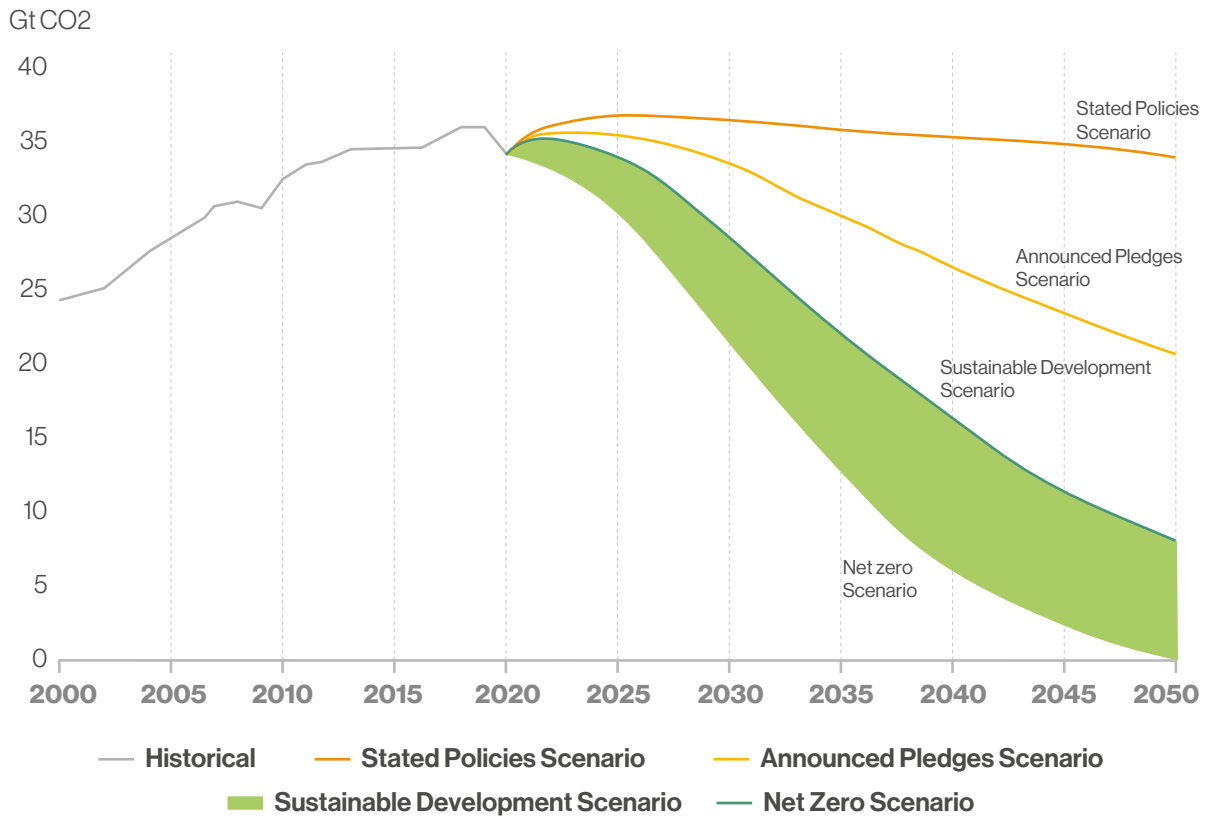
The International Energy Agency publishes medium- and long-term global outlooks, including the World Energy Outlook (WEO) and the Energy Technology Perspective (ETP). These analyses are developed using the Global Energy and Climate (GEC) model, which allows examining various potential energy transition pathways.

The GEC model does not aim to predict the future but rather explores different scenarios based on key assumptions about how the energy system could evolve in response to changing global contexts.

Its purpose is to provide a comparative framework for understanding multiple plausible versions of the energy future and to assist governments and businesses in identifying informed strategies to address climate change.

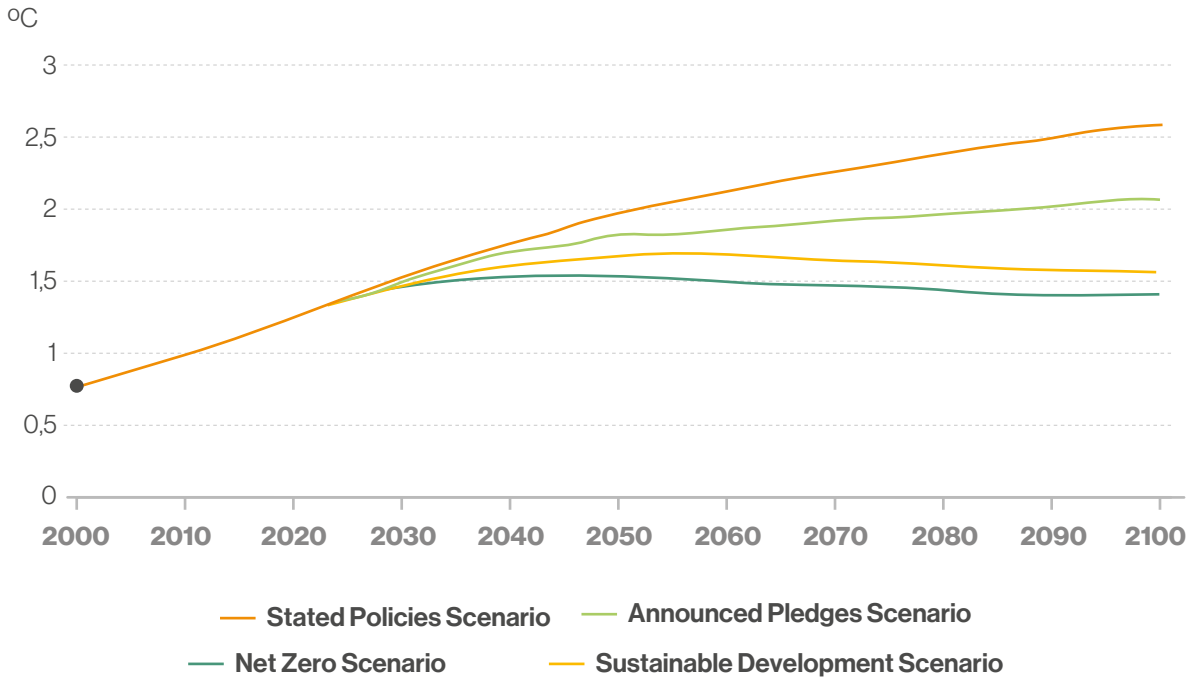
Figures 25 and 26 below illustrate the behavior of carbon dioxide emissions in the WEO-2021 scenarios for the period 2000–2050, as well as the projected temperature increases associated with these scenarios, respectively.

Figure 25. Transitional scenarios – projection of carbon dioxide emissions, 2000-2050 time horizon.



Source: Scenario Trajectories and Temperature Outcomes, World Energy Outlook (2021): https://www.iea.org/reports/world-energy-outlook-2021/scenario-trajectories-and-temperature-outcomes

Figure 26. Increase in global average surface temperature in the WEO-2021 scenarios, 2000-2010



Source: Scenario Trajectories and Temperature Outcomes, World Energy Outlook (2021): https://www.iea.org/reports/world-energy-outlook-2021/scenario-trajectories-and-temperature-outcomes

Under this context, we provide a more detailed description compared to the one presented in Chapter 5 of the various prospective scenarios from the International Energy Agency, which allow for analyzing potential energy system transformation pathways and their implications for transition risks and opportunities for energy sector stakeholders:

Net zero emissions by 2050 scenario (NZE): This scenario outlines a pathway aligned with the goal of limiting global temperature rise to 1.5°C and ensuring universal access to electricity and modern energy services by 2030. Key features include:

- A reduction in annual emissions to 23 $GtCO_2$ by 2030, achieving net zero emissions by 2050.
- For every dollar invested in fossil fuels, 5 USD is allocated to clean energy, and 4 USD to energy efficiency and end-use electrification.
- Energy intensity improves nearly three times faster than in the past decade.
- Hydrogen and its derivatives reach a share of nearly 10% of final consumption by 2050, with key applications in heavy industry and long-distance transportation.
- Bioenergy represents around 15% of total final consumption by 2050, remaining around 100 EJ to ensure sustainability.
- Carbon capture, utilization, and storage (CCUS) technologies expand to 1.2 Gt in 2030 and 6.2 Gt in 2050, with over 60% of these emissions coming from industrial and energy transformation sectors.

Announced pledges scenario (APS): This model assumes the full and timely implementation of all climate and energy commitments made by governments, including national net-zero emissions

targets and universal energy access goals. The key assumptions are:

- Global emissions decrease to 12 $GtCO_2$ by 2050, after peaking in the short term.
- Global warming stabilizes around 1.7°C by 2100 if commitments are met on time.
- For the first time, the effect of private sector commitments and sector-specific goals are incorporated.
- Low-emission hydrogen production exceeds 30 Mt/year by 2030, equivalent to more than 100 bcm[11] of natural gas, although not all of it directly replaces gas.

Declared policies scenario (STEPS): This scenario reflects the path the global energy system would take if only current and announced policies are implemented, without any new commitments. It represents a baseline to understand the impacts of current political inertia:

- Annual investment in clean energy exceeds USD 2 trillion by 2030, more than 50% above 2022 levels.
- Global gas demand grows slightly (<5%) between 2021 and 2030, then stabilizes at approximately 4,400 bcm until 2050.
- There is an accelerated expansion of renewable energy, energy efficiency, and technologies like heat pumps.
- Natural gas faces competitive pressure from coal and oil in certain markets, though it is also displaced by renewables and electrification.

This model assumes full and timely implementation of all climate and energy commitments made by governments, including national net-zero emission targets and universal energy access goals. Its main assumptions are:

- Global emissions decrease to 12 $GtCO_2$ by 2050, starting from a peak in the short term.
- Global warming stabilizes around 1.7°C by 2100, if commitments are implemented on time.
- The effect of private sector commitments and sector-specific goals is incorporated for the first time.
- Low-emission hydrogen production exceeds 30 Mt/year by 2030, equivalent to more than 100 bcm of natural gas, although not all of it directly replaces gas.

Declared policies scenario (STEPS): This scenario reflects the direction the global energy system would take if only current and announced policies are applied, without new commitments, and serves as a baseline to understand the impacts derived from current political inertia:

- Annual investment in clean energy exceeds USD 2 trillion by 2030, 50% above 2022 levels.
- Global gas demand grows slightly (<5%) between 2021 and 2030, then stabilizes at approximately 4,400 bcm until 2050.
- There is an accelerated expansion of renewable energy, energy efficiency, and technologies like heat pumps.
- Natural gas faces competitive pressure from coal and oil in certain markets, although it is also displaced by renewable energy and electrification.

11 Bmc: Billion cubic meters of natural gas.

Below, two of the most relevant transition climate risks for i) Canacol's natural gas value chain business and operations, and ii) the operation and market for LNG, are presented, along with a description of the impacts derived for the business:

Table 31. Description of two material transition risks and their derived financial impacts for the business

No.	Identified risk (Risk description)	Risk Typology	Category	Description of the impact that results in financial consequences	Climate scenario	Time horizon analyzed	Risk level
1.	Impact on the health of the workforce, especially those working outdoors and in confined spaces due to exposure to high temperatures.	Political and legal	Canacol's businesses in the natural gas value chain and its operations	According to the investment plan associated with Canacol's decarbonization plan, attention is expected to be paid to reduction targets aligned with mandatory legal requirements. These targets respond to the entry into force of new greenhouse gas regulations, which will require the adoption of various technological solutions. Consequently, an impact on capital investment costs (CAPEX) is projected, which were evaluated cumulatively over the different periods defined in the analysis' time horizons. **Variables for the financial impact analysis:** *2025-2030 Accumulated CAPEX value for the implementation of Canacol's decarbonization plan. *2030-2050 Accumulated CAPEX value for the implementation of Canacol's decarbonization plan.	All: APS, STEPS and NZE2050	2030-2040-2050	High
2.	Gradual massification of hydrogen-based technologies with a direct impact on gas production and an increase in natural gas imports starting in 2040. Rejection of gray hydrogen in favor of lower-impact production technologies.	Technological	The operation and the market for LNG	The slow regulation of the hydrogen market in Colombia and the high cost of the technologies will delay the consequences of the identified risk. The use of natural gas for gray hydrogen production could also reduce the consequences of the risk only during the 2030 time horizon. The increase in gas imports is associated with a lower natural gas production capacity in Colombia, impacting the market and Canacol Energy Ltda. A negative perception among companies along the natural gas value chain and a low acceptance of hydrocarbons could have negative consequences for Canacol Energy Ltda.'s reputational value. **Variables for the financial impact analysis:** **NA** The data analyzed from the International Energy Agency indicates that Latin America's Gross Domestic Product (GDP) is projected to grow by 2.4% starting in 2023, followed by a projected stagnation until 2050. This economic performance could limit the region's ability to advance the technological transition, especially with regard to the conversion and use of natural gas as a transition fuel. Furthermore, a significant reduction in the costs of technologies not associated with the use of gas is projected. For example, the cost of a hydrogen electrolyzer in the STEPS scenario would decrease from USD 1,505/kW today to USD 445/kW in 2050. In the APS scenario, it would reach USD 265/kW, and in the NZE scenario, USD 230/kW by the same year.	All: APS, STEPS and NZE2050	2030-2040-2050	High

The management measures for these risks, as well as the financial quantification of the derived impacts and the progress made in 2024, can be found in Chapter 5, particularly in table 19.

As a result of the analysis of the estimated financial impacts, it is concluded that the NZE 2050 scenario (Net Zero Emissions by 2050) represents the highest level of exposure for Canacol to transition risks. These risks have a high probability of materialization and could generate significant financial impacts for the company.

Additionally, the investment plan associated with the decarbonization strategy reflects specific and cumulative increases in costs, based on the increased complexity of meeting the projected reduction targets.

Description of opportunities and their derived financial benefits

The general methodology for identifying, assessing, and managing climate-related opportunities is detailed in figure 12. The main objective of this analysis was to identify, from a corporate perspective, the positive aspects derived from favorable outcomes related to the transition to a low-carbon economy (market, resilience, finance, among others) for the Company's operations. Below are the key premises of this study:

To initiate the identification of opportunities, an internal diagnostic process was carried out, with an emphasis on operations, climate change management, greenhouse gas emissions generation, and the needs of Canacol and its stakeholders.

The opportunities analysis was enriched with information on climate data, physical risks, and their management.

The analysis was also complemented with data on shared socioeconomic pathways, transition risks, and their management.

Opportunities were identified and assessed in two categories: i) Canacol's business in the natural gas value chain and its operations, and ii) the operation and market for LNG. Following the recommendations of the TCFD framework, Canacol considered the following opportunity typologies for the identification and assessment process: i) Market, ii) Products and services, iii) Eco-efficiency (natural and energy resource efficiency), iv) Resilience, and v) Energy sources.
The reference time horizons for the opportunity analysis (Table 28) were selected in accordance with climate and business strategies (financial and operational), as well as considering the sustainable development aspirations of the Paris Agreement and the global 2030 Agenda.

Each of the identified opportunities was independently evaluated to determine its level or relative importance. This was done by considering the various beneficiaries (impact criteria) of the derived benefits, which are directly related to the production and commercialization of natural gas, with a focus on the market and LNG production.

Now, continuing with the example mentioned in Chapter 5, for: i) Canacol's business in the natural gas value chain and its operations, and ii) the operation and market for LNG, we present two material climate-related opportunities, including the description of the benefits derived for the business.

Table 32. Description of two material opportunities and their derived financial benefits for the business

No.	Identified risk (Risk description)	Risk Typology	Category	Description of the impact that results in financial consequences	Time horizon analyzed	Risk level
1.	Multiple technology mapping initiatives consider technologies associated with natural gas consumption to leverage the achievement of short-term reduction goals; for example, market penetration in the freight transportation segment (converting 52,000 vehicles by 2052).	Eco-efficiency / Resilience	Canacol's businesses in the natural gas value chain and its operations / Operations and the market for LNG	Various sources consulted for this analysis identify multiple technologies associated with the use of natural gas as a transition fuel. These technologies not only contribute to reducing greenhouse gas emissions but also promote greater energy efficiency. In particular, the Indicative Action Plan of the Program for the Rational and Efficient Use of Energy (PAI–PROURE), developed by UPME, repeatedly highlights the potential of natural gas as an alternative to improve energy efficiency in key sectors such as industry and transportation. A representative example is the promotion of the use of LNG in long-distance freight transport, due to its applications in high-pressure direct injection and its storage solutions, which allow for greater energy density. **Variables for the financial impact analysis:** **NA** Although there is no future market information on natural gas-based technologies and applications for the industrial and transportation sectors, there are known market growth projections, specifically in relation to national targets for the transportation sector related to the number of natural gas-powered vehicles.	2030 and 2050	Very good

No.	Identified risk (Risk description)	Risk Typology	Category	Description of the impact that results in financial consequences	Time horizon analyzed	Risk level
2.	The worsening of climate phenomena such as El Niño in Colombia is forcing the activation of thermal power plants and, consequently, increasing the demand for natural gas to ensure the reliability of the national interconnected energy system.	Market	Canacol's businesses in the natural gas value chain and its operations	Various sources consulted for this analysis identify multiple The occurrence of climate phenomena such as El Niño and its impact on renewable hydroelectric generation increases the demand for natural gas due to the activation of gas-fired thermal plants. This situation represents a strategic opportunity, not only due to the increase in the volume of gas sold, but also due to the potential for participation in the electricity market through generation from non-conventional renewable sources, such as the photovoltaic solar parks contemplated in Canacol's Decarbonization Plan, as well as existing self-generation capacities. **Variables for the financial impact analysis:** **NA** In 2021, natural gas accounted for 10% of national energy production, 22% of total energy supply, and 16% of electricity generation. According to the information reviewed for this analysis, no increase in installed capacity for electricity generation from conventional thermal sources in the national grid is planned, and the fraction of electricity generation from thermal sources will remain stable. However, reliability charge schemes prevail in the essential public service scenario for electricity generation, suggesting that the need to diversify the national energy matrix will continue to keep thermal generation increasingly less relevant and non-conventional renewable sources more widely involved.	2030 and 2050	Very good

6.2.2. Canacol's climate change strategy

At Canacol, we recognize that the reduction and compensation of residual greenhouse gas (GHG) emissions are fundamental to addressing climate change and managing the associated risks and opportunities. Therefore, we have set ambitious goals to reduce our carbon footprint and actively contribute to Colombia's climate commitments, the Paris Agreement, and the 2030 Agenda for Sustainable Development.

In line with our risk analysis and considering the Colombian government's goal of reducing GHG emissions by 51% by 2030, as well as global goals for a low-carbon economy, we have established the following strategic objectives:

- Achieve carbon neutrality by 2050.
- Reduce the intensity of our GHG emissions from scopes 1 and 2 by 50% by 2035, using our 2022 baseline as a reference.
- Achieve a net zero methane emissions balance in all our operations by 2026.

During 2024, we reduced GHG emissions from scopes 1 and 2 by 4.5%, thanks to the optimization of energy resources, reduced electricity consumption, and the decrease of fugitive emissions.

In addition to our mitigation actions, we are strengthening our capacity for adaptation and resilience through a comprehensive impact, risk, and opportunity management approach. This approach allows us to reduce our vulnerabilities, enhance our learning capacity, and continuously transform to face future climate challenges.

Our double materiality exercise consolidated the updated material matters based on the company's risk management methodology and in alignment with the European CSRD Directive. As a result, climate change is highlighted due to its financial impact on the business.

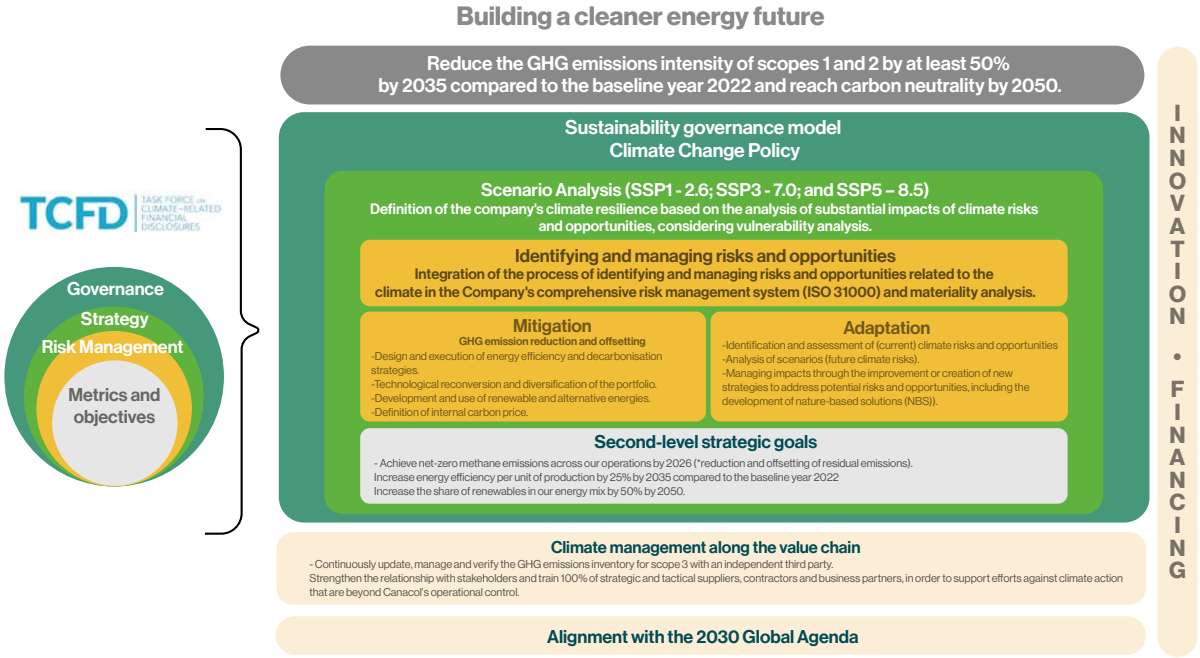
Climate strategy and resilience

[EM-EP-110a.3]

With a greater understanding of our climate change impacts, risks, and opportunities, in 2024, we began to strengthen our strategy, ensuring its alignment with the recommendations of the TCFD reporting framework, the Comprehensive Climate Change Management Plan for the Mining and Energy Sector (PIGCCE), current and emerging trends and regulations, as well as the needs of our stakeholders and our business. This includes the priorities of our business strategy at the financial and operational levels.

The overall structure of this action map is based on the elements that will be described below. Visually, it is represented in integrated levels that cover from the most strategic components (external) to the most tactical ones (internal). Additionally, a color system is used to illustrate alignment with the four management elements proposed by the TCFD:

Figure 27. General structure of Canacol energy's climate strategy



Higher purpose

Our higher purpose, "Building a Cleaner Energy Future," defines the essence of Canacol and extends beyond wealth generation. This principle guides our climate strategy and holds a central place in our corporate vision, setting the course toward sustainable development.

Governance

- **Sustainability governance model:** As explained in Chapter 4, Canacol has developed a sustainability governance model that integrates climate change management and energy efficiency under a double materiality approach. This model defines a governance structure comprising both executive and operational levels, establishing key roles and responsibilities for the design and implementation of processes, controls, and procedures. Through this structure, effective oversight, management, and monitoring of climate-related impacts, risks, and opportunities are ensured.

- **Climate change and energy efficiency policy:** The Climate Change and Energy Efficiency Policy establishes corporate guidelines and commitments that must be followed by employees, suppliers, contractors, and strategic partners. Its purpose is to generate long-term value for all stakeholders while contributing to the transition towards a low-carbon economy.

Strategy

Canacol's climate change strategy focuses on managing climate-related impacts, risks, and opportunities. To this end, the Company implements periodic processes for the identification, assessment, management, and monitoring of physical and transition risks, as well as their impacts and opportunities. These processes incorporate the analysis of current and future events through prospective scenarios.

Since 2023, we have identified and thoroughly assessed physical and transition opportunities and risks, analyzing the exposure of our key assets to six material climate threats: extreme heat, extreme cold, water stress and drought, precipitation-induced landslides, wildfires, and riverine flooding. This analysis was conducted through modeling that spans four-time horizons, aligned with the maximum term of our strategy: i) baseline 1990–2022; ii) short term up to 2030; iii) medium term up to 2040; and iv) long term up to 2050, considering different climate scenarios for both physical and transition risks (see chapters 4 and 5).

- **Climate investment plan** Since the formulation of our Corporate Climate Strategy in 2022, Canacol has implemented an investment plan aimed at achieving its strategic climate targets, mitigating risks, and promoting more sustainable energy sources. This plan includes capital investments dedicated to technological development, applied research, innovation, and participation in strategic alliances that strengthen climate action, such as our collaboration with associations like Naturgas (for more details on climate partnerships, lobbying policies, and other related matters, referring to the Lobbying and Trade Associations - Climate Change section).

In 2024, we allocated a total of USD 507,500 to climate and sustainability-related initiatives. Of this amount, 25.4% was invested in research processes, focusing on: i) seeking solutions to eliminate methane leaks, improve flaring efficiency, and manage venting in operations; and ii) enhancing the identification and comprehensive management of climate-related risks and opportunities, in alignment with the TCFD framework and the Company's Integrated Risk Management System [EM-EP420a.3].

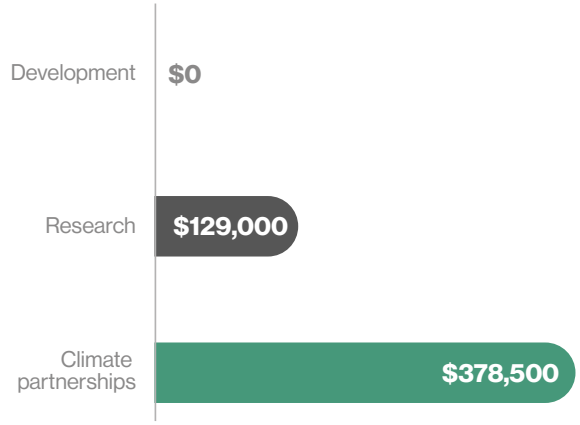
The remaining percentage was allocated to climate associations, where key sectoral topics were discussed, such as the analysis of new low-carbon technologies and the

feasibility of setting science-based targets in alignment with the Paris Agreement.

These investments not only reinforce our climate commitments but also enhance our risk profile in response to climate change, increasing operational resilience and the adaptive capacity of the Company. In this regard, technological reconversion and innovation are critical to ensuring more efficient, sustainable, and competitive operations in the long term.

Following market best practices, Canacol is also evaluating green financing mechanisms, such as sustainability bonds and other fixed-income instruments, to leverage strategic projects with environmental, social, and governance (ESG) impacts, thereby expanding the scope of our decarbonization initiatives.

Figure 28. Investment in climate action for 2024 (usd$)



Climate-related investments increased by 9.38% in 2024 compared to 2023, demonstrating the Company's efforts in decarbonization and advancing the energy transition agenda.

Lobby and business associations - climate change

Canacol reaffirms its commitment to decarbonization and energy transition through active participation in sectoral initiatives. Through these efforts, we contribute to promoting projects that foster the necessary training for an effective energy transition, as well as to developing strategies focused on green energy.

- We continue to be part of the Sectoral Alliance for Natural Gas: Pathway to Carbon Neutrality, in collaboration with NATURGAS and the Ministries of Environment, Mines, and Energy of Colombia. Additionally, we maintain our membership in the Colombian Petroleum Association (ACP). In 2024, our contribution to NATURGAS and ACP amounted to USD 378,500.
- We are advancing our alignment with international standards, assessing our adherence to the Oil and Gas Methane Partnership (OGMP 2.0) and reinforcing our membership in IPIECA, enabling us to align our efforts with global best practices.
- We reaffirm that our strategy and actions align with the principles outlined in the Paris Agreement and the 2030 Agenda. We explicitly state our position regarding public policies on climate change, ensuring coherence with the objectives of the Paris Agreement.
- We periodically review our affiliations with trade associations and lobbying groups to ensure consistency with our sustainability objectives.
- We ensure that all lobbying activities, donations, or climate-related sponsorships receive approval from Canacol's highest governing body and are properly recorded in our financial statements to guarantee transparency. Additionally, these activities must align with corporate objectives and receive corresponding executive approval.

- We have implemented a process to periodically evaluate whether our participation in public policy and lobbying activities (both direct and through our trade associations) remains aligned with the principles and objectives of the Paris Agreement.
- We establish clear executive-level responsibilities for all our lobbying and advocacy activities to maintain a robust governance framework for public policy engagement.
- We have a defined framework to identify and address any misalignment between the climate policy positions of our trade associations and our own stance.

Climate risk management

Canacol's risk management system is based on the ISO 31,000 standard and is defined as a cyclical process consisting of five steps. On a quarterly basis, the company conducts assessments to identify, assess, manage, and disclose potential risks that could impact the business, including climate-related risks.

Information regarding Canacol's climate risk management is detailed in Chapter 5 of this report. In response to the main opportunities and risks identified, the following management initiatives have been formulated as an integral part of our climate change strategy.

- **Master plan for decarbonization and energy efficiency [EM-EP-110a.3]**
  Our decarbonization master plan focuses on reducing greenhouse gas (GHG) emissions from Scope 1 and 2 across all operations, as well as offsetting residual emissions. This plan has a time horizon extending to 2050, aligned with the company's first and second-tier strategic objectives.

  During 2024, we made progress in strengthening, proposing, and analyzing initiatives that contribute to achieving these corporate

goals. These initiatives include reducing fuel and electricity consumption, as well as specialized projects whose implementation will result in cost-effective GHG emission reductions. Currently, our initiatives are under technical and financial feasibility studies, and we expect to share the main results in 2025, along with the projects selected and approved by the Board of Directors. Some of the initiatives currently under evaluation include:

- Improving compressor energy efficiency.
- Electrification of compression equipment.
- Reducing emissions in pneumatic systems operating with gas.
- Reducing fugitive emissions.
- Expanding and enhancing the efficiency of the solar farm for self-consumption in operations.
- Partial and gradual replacement of natural gas with hydrogen.
- Optimizing glycol use as a gas dehydrating agent.
- Replacing diesel and gasoline trucks and vans with hybrid vehicles.
- Minimizing gas flaring and venting in our operations.
- Reducing fugitive emissions through immediate leak detection and repair at gas processing, production, and transportation facilities.

Key milestones in our decarbonization processes during the reporting year include:

- Expansion of renewable energy projects as part of the transition to sustainable energy, including the installation of solar power systems at wells and satellite facilities.
- Implementation of frequent inspections of our systems and facilities to identify and correct leaks, executing corrective actions both internally and with the support of specialized third parties.
- Incorporation of ESG (Environmental, Social, and Governance) criteria in supplier selection, through sustainability assessments and prioritizing those with active strategies for emissions reduction, energy efficiency, and responsible practices.

To enhance transparency and provide a more comprehensive assessment of GHG emissions throughout our value chain, we continue to use Wood Mackenzie's emissions benchmarking tool. This tool is essential for analyzing our emissions, comparing them with those of other companies in the sector, and strengthening our reduction strategies.

Additionally, in 2025, we will design a GHG emissions recalculation policy, which will provide clear guidelines on how to adjust and/or recalculate Canacol's GHG emissions inventory. This policy seeks to ensure that decarbonization reports and emissions quantification are consistent, comparable, and accurate over time, reflecting any significant changes in our operations, such as in investment and/or divestment processes, or in the calculation methodology, such as adjustments in emission factors or formulas used for quantification.

- **Plan to achieve net zero methane emissions**

  Our methane reduction strategy is an integral part of our decarbonization master plan and aligns with our strategic objective to achieve net-zero methane emissions across all our operations by 2026. In 2024, we made progress in the planning of this strategy, establishing the following criteria:

  Operations included in the methane reduction plan: The plan covers the following facilities: Jobo Station, Plant 1A, Plant 1B, Plant 2, Plant 3, and the Betania, Aguas Vivas, Pandereta, Clarinete, Níspero substations, and the LNG Plant. Additionally, the water injection plant, the Rancho Hermoso block, and active exploration wells as of the end of 2025 will be included.
  Baseline establishment: In 2024, we initiated the measurement of our methane emissions baseline through on-site detection and quantification, focusing on:

  - Fugitive emissions in equipment and components.
  - Venting emissions (storage tanks, boilers, etc.).
  - Flare emissions.
  - Emissions from moto-generators.
  - Emissions from workovers, maintenance, well services, etc.
  - Combustion emissions from support vehicles, including tractor-trailers, trucks, and vans.

  Our on-site baseline will be compared with the theoretical 2022 baseline (Scope 1), calculated under the methodology of the Corporate GHG Emissions Quantification Standard (GHG Protocol). Based on this analysis, the company will assess whether it is necessary to adjust the baseline year of the strategic objective.

  Temporal analysis (time horizons): The methane reduction plan is being structured with a time horizon extending to 2035 (maximum), with intermediate targets for 2026 and 2030. Based on the results of this

analysis, we will make decisions regarding our commitment to the methane emissions reduction timeline and the offsetting of residual methane emissions.

Neutrality plan

This plan includes a time horizon from 2035 to 2050 and complements the decarbonization master plan. The neutrality plan will focus on offsetting emissions that could not be reduced through the strategic actions proposed and implemented by Canacol.

The roadmap to neutrality encompasses both medium- and long-term actions and has been presented in the PIGCCE. In alignment with our mitigation plan, PIGCCE also includes the corporate climate change adaptation plan, which deepens the analysis of risks and opportunities in the ecosystems of influence, under different climate scenarios, specifying the respective adaptation measures.

Capacity building in the value chain

As part of our strategic component of "strengthening action in the value chain," Canacol is developing a comprehensive climate change capacity-building program. This program includes a training and awareness strategy aimed at strategic and tactical suppliers, contractors, and business partners. Through this approach, we aim to drive emission reductions and ensure compliance with climate commitments, especially those that are beyond our operational control.

Internal carbon price

As a special measure for managing climate-related opportunities and risks, Canacol is in the process of establishing its internal carbon price. Currently, the company is evaluating two methodologies to determine the monetary value of greenhouse gas (GHG) emissions, which will be used internally to guide decision-making on the impacts, risks, and opportunities arising from climate change:

- **Shadow price:** This method associates a hypothetical cost per ton of CO2e to identify hidden risks and opportunities in our operations and to support strategic decisions related to future capital investments.
- **Implicit price:** This mechanism will be analyzed by dividing the cost of reduction or acquisition of equipment by the tons of CO2e reduced, in line with our decarbonization master plan.

Financial implications of climate change

[EM-EP-420a.4]

For Canacol, the financial implications of climate change are becoming increasingly significant. From an opportunity perspective, emissions reduction remains a key factor, with the elimination of fugitive emissions standing out as a potential source of substantial savings, estimated at over USD $5 million by 2050. Additionally, the implementation of low-carbon technologies and process optimization contributes to improving operational eco-efficiency and reducing costs.

Regarding physical risks, extreme weather events, such as water stress, flooding, and other phenomena assessed in our climate scenario analysis, could impact critical infrastructure and affect long-term operational continuity. Furthermore, the tightening of environmental regulations and sustainability commitments could lead to higher investments in clean technologies and mitigation strategies.w

In this context, Canacol adopts a strategic approach aimed at balancing cost reduction with the management of operational risks and compliance with regulations as it transitions to a low-carbon economy. Additionally, the Company continues to leverage its gas sale and transportation contracts, ensuring

a competitive advantage in meeting Colombia's growing energy demand, which helps reduce its exposure to oil price volatility.

Metrics and targets

- **Management metrics**
  Our sustainability and climate change management model involves measuring, managing, and analyzing the performance of material metrics for the sector, including those required by GRI, SASB, and IPIECA standards. Canacol's climate strategy establishes strategic (business-specific) and tactical (business-specific and related to the mentioned reporting standards) metrics. These are aligned with the management framework for the issue of "Mitigation and Adaptation to Climate Change," established in the recent materiality analysis conducted by the Company with the guidance of the consulting firm ERM Colombia.

Below, we present some of our strategic metrics that enable the management and analysis of Canacol's performance against its climate change strategic objectives:

- **KPI 1:** % of absolute emission reduction of Scope 1 and 2 (tCO2e)
- **KPI 2:** % of relative emission reduction of Scope 1 and 2 (tCO2e/boe)
- **KPI 3:** % of absolute methane emission reduction (tCH4)
- **KPI 4:** % of increase in energy efficiency per production unit (MWh/boe)
- **KPI 5:** % of absolute emission reduction of Scope 3 (tCO2e)

- **Science-based targets**
  Canacol is currently analyzing the possibility of establishing a science-based target for its operations, in alignment with the requirements of the Science Based Targets initiative (SBTi).

  At present, this initiative is developing the standard for setting science-based targets in the oil and gas sector, aligned with the latest climate science. However, we have decided to preliminarily design our science-based targets according to the criteria established in the "SBTi Corporate Near-Term Criteria" document, considering the Absolute Contraction Approach (ACA).

7 Metrics and objectives related to climate change

7.1. Disclosure scope in relation to the TCFD framework recommendations

Metric & targets

This report discloses Canacol's action against recommendations a, b and c of the "Metrics and targets" element of the TCFD framework:

Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process
Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

7.2. Detail of the element "metrics and objectives"

In line with our materiality analysis and the evaluation of climate risks and opportunities, we have defined the management scope for the sustainability issue of Climate Change Mitigation and Adaptation as follows:

- **Greenhouse gas reduction:** Implement actions aimed at reducing emissions through the design and execution of energy efficiency strategies, decarbonization, technological conversion, and portfolio diversification.
- Innovation and Development of Alternative **Energies:** Promote innovation and the use of renewable and non-conventional energy sources, contributing to a fair transition towards a low-carbon economy.
- **Climate risk management:** Identify and comprehensively manage climate risks and opportunities, focusing on reducing vulnerabilities and strengthening corporate resilience.

This approach has enabled the establishment of climate strategies, objectives, and metrics aligned with SASB and GRI standards, incorporating an impact-focused perspective.

Climate performance 2024

The following indicators reflect Canacol's climate performance in line with the outlined strategy:

- **Reduction in energy consumption** compared to 2023 levels.
- **Increase in the share of renewable sources** in the energy matrix.

- **Progress in the decarbonization master plan**, with an effective reduction in emissions both at the corporate level and across the value chain.
- **Optimization of indicator management**, through the verification of the carbon footprint.
- **Expansion of the scope 3 database**, improving coverage and accuracy in reporting indirect emissions.

Energy consumption[13]

[GRI 302-1] [GRI 302-3] [GRI 302-4]

By the end of 2024, we achieved a reduction of 9,602.2 MWh in our total energy consumption compared to the previous year. This result reaffirms our commitment to energy efficiency and emissions reduction. As in previous periods, we did not use diesel in our operational processes, ensuring our energy self-sufficiency through the exclusive use of natural gas produced at our facilities.

In line with our strategy for transitioning to clean sources, we reached a consumption of 226.5 MWh from hydroelectric and solar sources. These advances reflect our commitment to decarbonization and the integration of low-emission technologies into our operations.

Regarding thermal energy consumption, we recorded a total of 404,982.5 MWh during 2024, including both main operations and supporting processes. This report provides a detailed breakdown of energy consumption by source and operational activity.

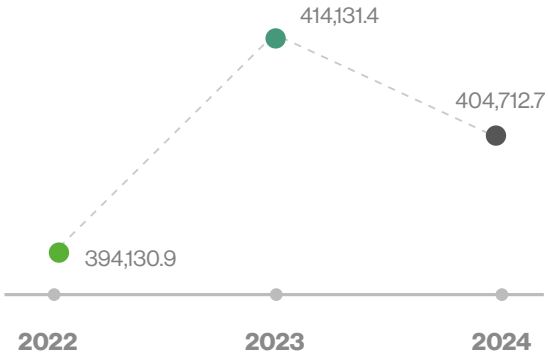
Key progress in energy efficiency:

- **Integration of renewable technologies:** Installation of photovoltaic systems in remote operations and low-energy infrastructures, covering needs such as lighting, control, security, and climate control.
- **Optimization of equipment and systems:** Implementation of advanced measurement systems, modernization of equipment that operates on fossil fuels, and evaluation of new generation technologies.
- **Awareness and training:** Promoting a culture of energy efficiency among employees through awareness campaigns and training in sustainable practices.

These efforts not only contribute to mitigating climate risks but also strengthen our ability to operate more sustainably and resiliently in a changing energy landscape.

Total energy consumption in operations[13 14]

[GRI 302-1]



12 For all energy consumption and performance calculations, conversion factors from both the Metric Decimal System and the Imperial System were used, including sector-specific metrics such as bep. For example: a) kscf/bep = 5.7; and b) m3/Kscf = 28.32. Similarly, emission factors (EF) and calorific values (PCI) of fuels produced by the company were used, as well as EF and PCI of other fuels reported by the UPME 2016 calculator (updated in 2019: http://www.upme.gov.co/calculadora_emisiones/aplicacion/ayuda.html).

13 The total energy consumption value in the operation (MWh) includes the consumption of renewable, non-renewable, and electrical energy.

14 During 2024, we carried out processes to correct the calculation of non-renewable energy consumption in operations. This is reflected in the new figures presented in the current ESG Report.

Total operational energy consumption, by source[15]

Source	Units	2022	2023	2024
Non-renewable energy	MWh	393.565,5	413.740,7	404,333,0
Natural gas	MWh	393.565,5	413.740,7	404,333,0
Diesel	MWh	-	-	-
Renewable energy	MWh	373	225,3	226,5
Hydraulic+Solar	MWh	373	225,3	226,5
Electricity in offices[16]	MWh	192,4	165,4	153,2[17]
Energy intensity[18]	kWh/bep	33,3	35,7	39,3
Total Operational Energy	**MWh**	**394.130,9**	**414.131,4**	**404.712,7**

Between 2023 and 2024, Canacol achieved a reduction of 9,602.2 MWh in its total opverational energy consumption, decreasing from 414,737.9 MWh to 405,135.7 MWh, representing a 2.3% decrease compared to 2023. This reduction is mainly attributed to the optimization of natural gas consumption in operations [GRI 302-4].

In line with our commitment to energy transition, we increased renewable energy generation. The production of solar and hydroelectric energy rose from 225.3 MWh in 2023 to 226.5 MWh in 2024, showing a growth of 0.51%.

In the administrative sector, we implemented energy efficiency measures that resulted in a 7.4% reduction in electricity consumption at our Bogotá headquarters, despite the move to a new office. This reflects the positive impact of our savings initiatives and more rational energy use.

Despite these advances, the energy intensity of operations increased between 2023 and 2024, rising from 35.7 kWh/bep to 39.3 kWh/bep, a 10.2% increase, mainly associated with higher compression requirements due to the natural decline of the production process [GRI 302-3].

These results underscore the need to continue strengthening our energy efficiency efforts, exploring new technologies, and optimizing processes to mitigate the impact of increased energy intensity.

15 All calculations relevant to our energy performance indicators were made using direct measurement methods.

16 The electricity emission factor in Colombia for 2024 is 0.21742 kgCO2e/kWh.

17 The electricity consumption of Canacol during the year 2024 was 153.2 kWh, which emitted 33.31 tons of CO2e according to the location-based and market-based approaches.

18 The energy intensity considers only renewable and non-renewable energy consumed within the operation. Electricity is not included in this indicator.

Total energy for complementary processes to the operation[19]

Energy consumption in complementary processes comes from the use of diesel for the fire protection system (fixed source), as well as diesel used for material transportation in production, and diesel and gasoline for employee transportation (mobile sources).

Source	Units	2022	2023	2024
Non-renewable energy	MWh	594,0	545,8	380,7
Diesel B10[20]	MWh	491,3	469,9	353,0
Gasoline E10[21]	MWh	102,7	75,9	27,7
Renewable energy	MWh	66,0	60,6	42,3
Biodiesel and anhydrous ethanol	MWh	66,0	60,6	42,3
Total Complementary Energy	**MWh**	**660,0**	**606,5**	**423,0**
Total global energy (operational + complementary)[22]	**MWh**	**394.598,5**	**414.572,5**	**404.982,5**
Global energy intensity[23]	MWh	33,4	35,7	39,3

In 2024, Canacol recorded a 30.3% reduction in total complementary energy consumption, decreasing from 606.5 MWh in 2023 to 423.0 MWh. This reduction is mainly associated with the optimization of non-renewable energy use, which dropped by 30.3% over the period.

Breaking down by fuel type, diesel consumption decreased by 24.9%, while gasoline consumption registered a more significant reduction of 63.5% compared to 2023. However, in terms of overall energy intensity, a 10.2% increase was observed, driven by higher compression requirements due to the natural decline in the production process [GRI 302-3].

GHG emissions[24 25]

We meet 16% of the country's gas demand, avoiding 106,135.9 tCO2e/year. To ensure rigorous and transparent environmental management, we conduct an annual quantification of our GHG inventory, verified by an independent third party in accordance with ISO 14064 and the GHG Protocol standards.

Our methodology incorporates emission factors recommended by the IPCC and the Colombian energy matrix (UPME). However, for the calculation of emissions related to natural gas consumption from our operations, we use a specific emission factor determined through annual gas chromatographies,

19 All calculations related to the energy consumption indicator in processes complementary to our operation were carried out using direct measurement methods.

20 Information is provided regarding the portion of non-renewable energy present in Diesel B10 (90%).

21 Se presenta información con respecto a la porción de energía no renovable presente la gasolina E10 (90%)

22 The global energy considers both operational and complementary renewable and non-renewable energy but does not include electricity in this indicator.

23 The global energy intensity considers only renewable and non-renewable energy consumed within the operation. Electricity is not included in this indicator.

24 The GHG emissions inventory and the progress calculations derived for each of the years reported in this report include the quantification of the following gases: CO2, CH4, N2O, HFC, and PCF. Other GHGs, such as SF6 and NF3, are not generated within the organizational and operational boundaries of the Company.

25 The control approach used for the calculation of GHG emissions by Canacol is "operational control," accounting for 100% of the GHG emissions from all activities, operations, and processes carried out.

which are reviewed by the National Hydrocarbons Agency (ANH). For 2024, the emission factor for natural gas produced in our operations was 1.86 kgCO2e/m3.

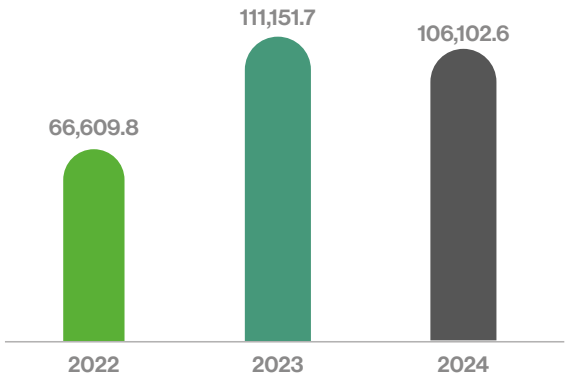
In 2024, corporate emissions from Scopes 1, 2, and 3 decreased by 7.9% (-316,202.5 tCO2e) compared to the previous year, with a reduction in operational emissions (Scopes 1 and 2) of 4.5% (-5,044.3 tCO2e) and a reduction in value chain emissions (Scope 3) of 8.0% (-311,158.2 tCO2e) [GRI 305-5].

Direct emissions (scope 1)

[GRI 305-1] [GRI 305-5] [EM-EP-110a.1]

In 2024, our operations generated 106,102.6 tCO2e in direct emissions, representing a 4.5% reduction compared to the previous year. This decrease is attributed to lower natural gas consumption for operations, improvements in fugitive refrigerant emissions, and reduced methane emissions.

Direct emissions 2024 (tCO2e/year)



Source	tCO2e	Contribution
Stationary combustion	87.130,9	82,1%
Combustion mobile sources[26]	102,7	0,1%
Industrial processes	-	0,0%
Fugitive emissions in refrigerant systems and fire extinguishers	30,0	0,0%
Fugitive emissions in gas production[27 28]	18.839,0	17,8%
Total direct emissions	**106.102,6**	**100%**

Stationary combustion sources and fugitive emissions from refrigerant systems, fire extinguishers, and gas production account for 99.9% of our direct emissions. In 2024, emissions related to these sources decreased by 5,007.2 tCO2e (111,007.1 tCO2e in 2023). It is worth highlighting the corporate effort to reduce the carbon footprint associated with the use of refrigerants and fire extinguishers, which decreased by 82.9% compared to 2023, from a previous value of 176.1 tCO2e

Aligned with our methane reduction plan, we recorded a 12.1% decrease in methane emissions in 2024 compared to 2023, driven by the implementation of best practices in leak detection and control, as well as a reduction in natural gas production.

Gross direct GHG emissions (scope 1) to the atmosphere (tCO2e)

[EM-EP-110a.1]

Additionally, we monitor gross Scope 1 GHG emissions, including CO_2, CH_4, and N_2O, to strengthen our control and reduction of environmental impact.

GHG	Units	2022	2023	2024
Carbon dioxide (CO_2)	tCO2e	48.129	89.470	87.202
Methane (CH_4)	tCO2e	18.253	21.461	18.867
Nitrous oxide (N_2O)	tCO2e	24	45	44
Hydrofluorocarbons (HCFs)	tCO2e	204	176	30

Total gross direct GHG emissions (scope 1) to the atmosphere (tCO2e)

[EM-EP-110a.2]

GHG	2024
Hydrocarbons flared from stationary and mobile sources	87.202
Fugitive Emissions	18.867
Other combustion	0
Emissions generated during processing	87.131
Other Emissions	496

26 The biogenic emissions for 2024 were 7.8 tCO2e, corresponding to the portion of biofuel reported in the Complementary Energy Consumption section.

27 Fugitive emissions were estimated using the 2006 IPCC Guidelines for National Greenhouse Gas Emissions. https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Voume2/V2_4_Ch4_Fugitive_Emissions.pdf

28 The methane (CH4) emissions for 2024 were 632.99 tCH4. Canacol plans to achieve certification from the Oil and Gas Methane Partnership (OGMP) - Gold Standard, to report methane emissions by 2026.

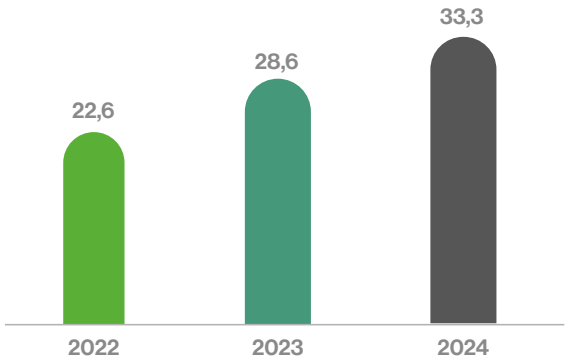
Indirect emissions scope 2

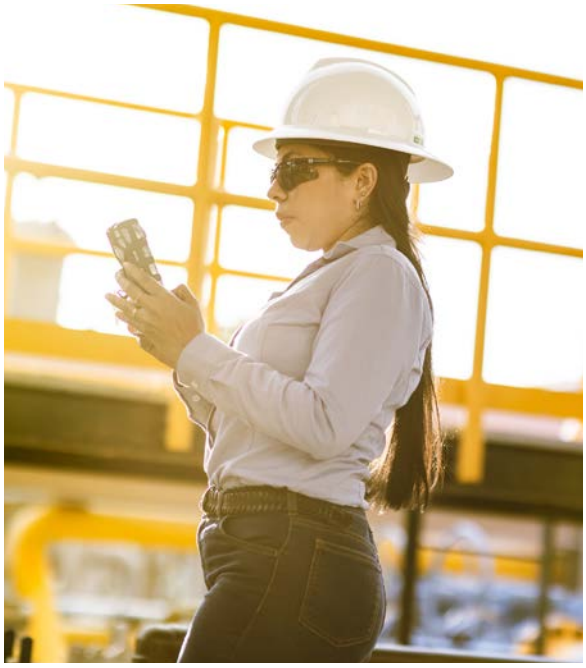
[GRI 305-2] [GRI 305-5]

Due to our on-site generation business model, our production facilities do not consume electricity from the National Interconnected System (SIN). For this reason, our Scope 2 emissions are exclusively derived from electricity consumption in administrative offices.

At Canacol, we promote efficient and responsible energy management in these facilities by implementing operational best practices and fostering an organizational culture focused on energy savings.

Indirect emissions 2024 (tCO2e/year)





Scope	Source	Consumption [kWh]	Emissions [tCO2e]	Percentage Change in Emissions [% tCO2e]
Scope 2	Electricity in offices	153.195	33,[29]	16,58%

In 2024, electricity consumption in our offices decreased by 7.4%. However, Scope 2 indirect emissions increased by 16.6% due to the rise in the national grid emission factor. During this year, the emission factor was 0.217 $kgCO_2e/kWh$, a 26% increase compared to 2023 (0.1728 $kgCO_2e/kWh$).

This increase is attributed to climatic and natural events that affected the availability of hydroelectric generation in the country, raising the share of thermal sources in the energy matrix and, consequently, the grid's emission factor.

29 In 2024, Canacol did not purchase renewable energy; therefore, the market-based and location-based emissions for Scope 2 are the same, totaling 33.31 tCO_2e.

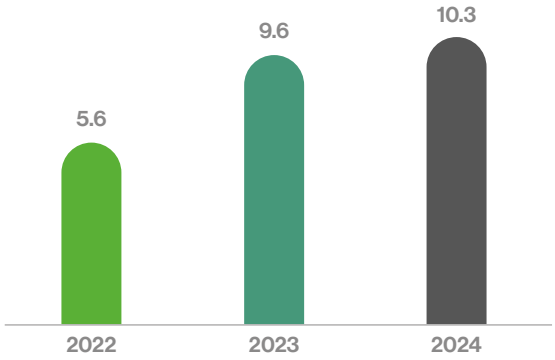
Emission intensity

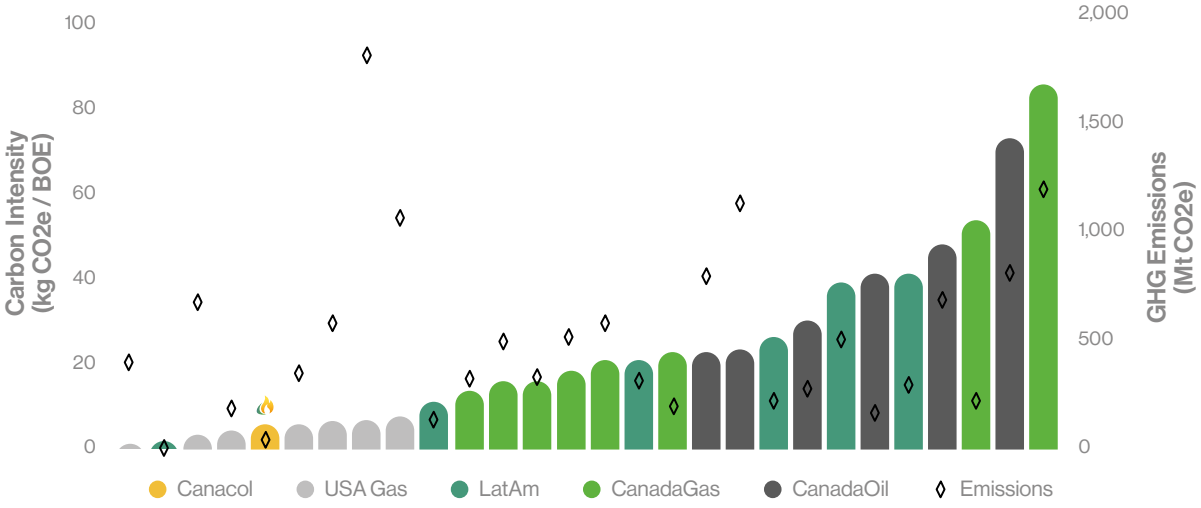
[GRI 305-4]

In 2024, production from our fields decreased due to the natural depletion of reservoirs. To ensure continuity in gas supply, we increased compression in our operations, resulting in a 7.6% increase in Scope 1 and 2 emissions intensity compared to 2023.

Thanks to the actions implemented to optimize operational efficiency, we managed to mitigate the impact, maintaining a stable trend. Despite this context, Canacol continues to stand out for having one of the lowest carbon intensities in Latin America. Our emissions are 75% lower than those of oil producers and 45% lower compared to other natural gas producers, reaffirming our leadership and commitment to more efficient, cleaner, and more sustainable production.

Emission intensity 2024 ($kgCO_2e/boe$)





Emissions in the value chain - scope 3

[GRI 305-3] [GRI 305-5]

In 2024, we strengthened our management of indirect emissions by updating and expanding our Scope 3 analysis. Following our first verification in 2023, we improved the accuracy and coverage of the calculation, consolidating the measurement of the nine most relevant categories in our value chain and operations.

	Category	Tons of CO2e	Contribution
3.1	Goods and services purchased	87.822,3	2,5%
3.3	Fuel and energy	71,3	0,0%
3.4	Upstream transport	117,4	0,0%
3.5	Waste generated in operation	152,3	0,0%
3.6	Business Travel	177,6	0,0%
3.7	Employee transportation	380,1	0,0%
3.9	Downstream Transportation	14.191,7	0,4%
3.11	Use of Sold Products	3.439.484,0	96,6%
3.15	Investments	18.683,5	0,5%
	Total	**3.561.080,2**	**100,0%**

This year, we published nine categories, including investments, corresponding to our 10% stake in Termotesorito, operated by Celsia near the Jobo Station.

Our emission mitigation strategy across the value chain encompasses the responsible management of suppliers and contractors, integrating environmental, social, and governance criteria into the procurement of goods and services, as well as in the transportation and logistics of inputs and products [GRI 308-1] [GRI 308-2].

As part of this approach, Canacol has made progress in developing a comprehensive training and awareness program aimed at strategic and tactical suppliers, contractors, and business partners. This program is designed to strengthen capabilities in key areas such as decarbonization, environmental impact management, and climate change mitigation, promoting more sustainable practices throughout our supply chain.

Additionally, it is worth noting that for Category 11, "use of sold products," we applied our internal emission factor for natural gas and the Castilla crude factor obtained from UPME[30]

Emission factor used for scope 3 inventory - category 11: use of sold products

Fuel	CO_2	CH_4e	$N_2Oen]$	CO_2e
Crude Oil from Castilla	11,28 kg CO^2/gal	4,35E-04 kgCH_4/gal	8,70E-05 kgN_2O/gal	11,32 kgCO_2e/gal
Gas Jobo Station	1,86 kgCO_2/m^3	3,37E-05 kgCH_4/m^3	3,37E-06 kgN_2O/m^3	1,86 kgCO_2e/m^3

30 2016, Emission Factor Calculator for Colombian Fuels http://www.upme.gov.co/calculadora_emisiones/aplicacion/ayuda.html) - Updated in 2019

Climate Change Management Report

TCFD

2025

CANACOL ENERGY